

REHABILITATION OF THE WOUNDED

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THE MEANING OF REHABILITATION

BY MAJOR JOHN L. TODD,

Board of Pension Commissioners for Canada.

The term "rehabilitation" is used in more than one sense. In a narrow sense it refers only to soldiers; sometimes it is used as though only disabled sailors and soldiers required rehabilitation. When it is used in that way the flood of sound, strong men who will return from fighting to their homes at the end of the war is forgotten.

Rehabilitation of soldiers necessarily includes the replacement in civilian life of the uninjured men who will return after the war from service, on shore and afloat, as fast as the ships of the world can carry them. But the term rehabilitation should be used in a broader sense; rehabilitation includes not only sailors and soldiers but the whole community. It is so, for our sailors and soldiers are citizens. Since they are citizens, their rehabilitation is a matter of such wide extent that it can leave no phase of social organization untouched.

In Great Britain, a Department of Reconstruction with wide connections and wide powers exists to study questions such as these. In Canada, the same thing is done by a committee of the Cabinet.

Rehabilitation in the narrowest sense, as it refers to the replacement of broken fighting men in their homes, is well understood. It is well understood on this continent because of the many very excellent articles upon "rehabilitation" which have appeared not only in scientific and semi-scientific publications but in the popular press. Rehabilitation in the broader sense has been less considered. Because it is so I will mention in a general way, first, some of the problems and tendencies of rehabilitation in the larger sense and then allude more particularly to some of the points connected with the rehabilitation of sailors and soldiers where experience in Canada has shown difficulties to be most likely to arise.

If, in speaking of rehabilitation, our minds are not fully conscious of that which is being done at every minute on the world-wide battle field we lack appreciation of our situation. Those who are fighting are deciding for us the form which the rehabilitation of

our country shall take. In fighting, and in planning rehabilitation, we are deciding not only for ourselves but for our children and for our children's children. Upon the decision arrived at, the future development of our race depends. The plan which rehabilitation will follow depends entirely upon the result of the war. The first step in rehabilitation is to win the war. Its form, if we are beaten or if the war ends indecisively, will be quite different from that which it will take if we win. If our victory is not complete, our future organization will be military, and our dominant aim, defence against the aggression of future wars. But since we shall win decisively we will treat of the form of rehabilitation which complete victory makes desirable.

During reorganization after the war it will be unbelievably easy to achieve social ideals which before the war seemed impracticable and impossible of attainment. It will be especially easy on this continent not only because ours are young peoples, still in a stage of development where social structure is not stable, but also because the war has aroused a great spirit of mutual helpfulness, a desire to sacrifice self, a self-devotion. These factors cannot but leave an enduring mark upon national life. May our plans be so modelled that a measure of good may come from this evil of war.

In order that rehabilitation may be successful, it is essential that there should be a clear understanding in the mind of every citizen, not only of that which the community ought to do for itself and for the returning soldier, but also of that which every returning man ought to do for himself. Such a general knowledge, secured by wide publicity, constitutes the most powerful means of securing right action. The urge to do that which we are taught to do, that which is expected of us, is the most powerful of all human impulses. It is the herd instinct: the desire to do that which is right is stronger than self-preservation,—men die at their posts because it is their duty to do so: it is stronger than the wish for parenthood,—monks and nuns remain childless because it is their duty to do so.

Let us learn this from the enemy; "Will conquers." That is the device always before the German wounded. Just as unquestioningly as they once believed in German might, every German now believes that a disabled man, if he wills it, can be self-supporting and that it is the duty of every returning man by his will and through the aid of his fellows to become a self-supporting unit, a man who pulls his weight in the boat and is not a passenger.

WORLD POLITICS

It is only by wide instruction, by constant repetition of the truth, that such an atmosphere can be assured to us in this country. Much has been done towards doing so. More must be done; everyone must know what rehabilitation, in the widest sense, ought to accomplish. One of the stated aims of the Allies is the establishment of some form of leagued nations by which future wars may be prevented. Since the Allied Nations are democratic communities, ruled by the suffrages of their individual citizens, it is necessary that we citizens should have a wider knowledge of the world and of world questions than has heretofore been ours. We must come to realize that it is no longer possible for a wise nation to remain isolated and uninfluenced by the current of the world's events. In the modern world all peoples are interdependent—and there is a real community of interest among them. Rehabilitation will bring nearer the liberty of thought, the equality of nations, the brotherhood among men, which France long ago placed before mankind as an ideal. We must be prepared to welcome a federation of the world.

Our internal national life will scarcely go back to its old form. The war has brought a habit of effort and a habit of thrift to many. We shall win the war through effort. We shall win the war after the war in the same way. Faithful living in France, faithful living here, has become a national creed. It will not be forgotten lightly. A determination which consecrated every resource to public uses will persist, in a measure, during peace; it will insist upon a proper conduct of public affairs.

In Great Britain, it is certain that many businesses, formerly conducted by private initiative, will be carried on after the war under public direction. How far it will be nationally advantageous for such a movement to develop is uncertain. If a generalization must be attempted, it would seem reasonable to say that processes or businesses which have become standardized and stereotyped in their operation may well be brought under public control, while processes which are still developing ought to remain in private hands where initiative and individual effort will meet with the greatest reward and incentive.

Before the war, circumstance left many women to a world of children, church and cooking. During the war, women have been

successful in wider fields than these. Their service has convinced many, who once refused conviction, that women are fit comrades for men and have, with them, a right to self-government. No longer are there suffragettes in England, for women have the vote! Everywhere there has been a tendency, not only to recognize woman's right to a voice in government, but her right to support from the state in the national service which woman only can render. Laws granting maternity allowances and mothers' pensions have been passed in many countries.

SAME PRIVILEGES FOR CIVILIANS AS FOR SOLDIERS

Public sympathy is quick to relieve hardships which affect sailors and soldiers or their dependents. Consequently, many evils touching sailors and soldiers have been remedied while the same evils pass unnoticed as matters of ordinary circumstance when civilians are affected. When it is seen that these things can be dealt with for sailors or soldiers it will be insisted that they should also be dealt with when ordinary citizens are concerned. There are many things now done for a citizen while he is serving in navy or army which a model community should do for its members at all times.

Members of an ideal community should possess instructions permitting full advantage to be taken of their capacity for usefulness. Soldiers are taught while they are serving; if they are disabled, they are taught a vocation during their convalescence and after their discharge. It is well that it is so for the best minds of the coming generation are at the front: our universities are empty. For the future good of our communities it is necessary that the interrupted education of these young men should be continued and opportunity for development be given to them.

Canada maintains in Great Britain and in France a Khaki College. Its function is to bring instruction to men who are still serving.

The Canadian Invalided Soldiers' Commission provides general education and instruction in vocations for disabled men during their convalescence. Because it is in the public interest to do so, it is increasingly the tendency to give technical education, or, for the illiterate, general education, to men who require no training on account of disability but who are anxious to learn.

After the war, men who want to study will obtain instructions through Workers' Educative Associations, or through the opportunities offered by modern universities for the education of adults. The value of increased education to sound social development is shown, strikingly, by the important place in British public affairs taken by workmen who acquired their knowledge of public problems, of public organization and of individual responsibility in these matters through courses studied while they followed their trades.

Among the most popular of the courses given in the Canadian Khaki College are those which deal with citizenship, its duties and its privileges. Men who study these things while they fight will not lend themselves to the irresponsible ravings of a Bolshevik. Their influence and knowledge will substitute reasonable methods of removing social injustice for the anarchy and disorder of an ignorant people.

PUBLIC HEALTH

Medical treatment will be given whenever discharged men require it because of disabilities incurred during their service; pension schemes, such as War Risk Insurance, will give the men and their dependents insurance services, which will protect them against risks of many sorts. The fact that former sailors, soldiers and their families, are protected against risks of death, accident and ill-health, will inevitably lead towards the extension of social, health and life insurance to all citizens. In England, National Health Insurance already exists: a Ministry of Public Health will be founded after the war, if not before.

Because sailors and soldiers cannot conceal the existence of venereal disease, as is done by civilians, knowledge of the prevalence of venereal disease amongst our people has become general. Knowledge of the success with which these social diseases can be combated in the army and navy by preventive or curative measures has spread. At last, the prudery and license which long prevented control of venereal diseases is being removed by knowledge. The passing of adequate health laws in England, in Canada and elsewhere, is reducing the loss caused by venereal diseases. At last, those responsible for public health are getting powers commensurate with the importance of these plagues, powers almost as great as they have in dealing with smallpox, a disease that slays its units where syphilis slays its thousands.

REHABILITATION OF DISABLED MEN

And now let us turn to disabled men and their rehabilitation. Wide publicity by voice, by print and by moving-pictures, among other means, has made Americans know that disabled soldiers can be made independent civilians by proper treatment, by proper training, and by careful replacement in employment.

The treatment received by disabled men includes all the devices that art and science can suggest: no means of reducing a disability is left untried. One new thing is the method by which Italian surgeons make use of the muscles in the stump of an artificial limb. They separate a muscle, make at its end a loop or a knot in the tendon, to which a cord can be tied. When the muscle contracts the cord is pulled and, if it is attached to an artificial leg, the soldier actually moves his limb by muscles which once moved a real leg!

There have been many improvements in artificial limbs and prosthetic appliances of all sorts. The number of men who will use appliances will be large. There is but one efficient way of supplying artificial appliances to disabled men. In order to obviate a thousand difficulties, a government should establish definite types of limbs and of other appliances, make these unquestionably the best, and supply only them to men who are entitled to appliances at government expense. The manufacture of artificial limbs will be an industry of some importance for a generation to come. It will be an industry, from its nature, peculiarly fitted for disabled men. The French expect to place disabled soldiers in charge of centers all over France where new appliances may be obtained as they are required, and where old ones may be sent for repairs. It is a plan which might well be adopted elsewhere.

The training of returned soldiers is of the greatest importance. "Manners maketh man." A man's habits are himself. A man is that which he has done and is accustomed to do. If our men are to be good citizens in civilian life, as they have been in military life, they must be trained in good habits. They must be accustomed to doing the thing right in civilian life before they are discharged. It is impossible for habituation to the necessities of civilian life to commence too soon after it becomes evident that a man is no longer fit to be a sailor or a soldier. It takes months, sometimes years, to train a good sailor or soldier; it will take months of teaching and

many more months of living to undo that training and create habits harmonizing with civilian life. By work, by conversation, by every power of suggestion, men's thoughts should be turned to civilian life as soon as it becomes certain that they are to be discharged from service. Training of that sort is as much a part of remedial treatment as is nursing or operation. If it is wanting men become habituated to life in hospitals: they become hospitalized, lose all wish for initiative, for work, and become especially prone to mental and nervous disorders.

From the beginning, disabled men must be accustomed to the idea of work, of self-support, and not only to the idea of work in general, but to work in some special occupation. It may be that men, by the nature of their injuries, are unable to return to their pre-war employment. Such men must be urged to accept training in occupations which their aptitude and disability make proper for them. Sometimes men are unwilling to accept training. Consequently, there has been discussion whether vocational training, as it is called, should be made compulsory. The discussion is beside the point because experience shows that if men are well taught and well advised, opportunities for training are not usually refused. If men constantly refuse training, the training is at fault.

In dealing with the men, every method of persuasion, every means of pressure, should be used. Pressure from a man's family, from those dependent upon him, is often successful in making a man accept training at first refused. Even the cupidity of returned men may be worked upon; it has been found useful to point out to thrifty French peasants that the government is offering them, for nothing, training for which many civilians are very glad to pay.

Disabled men who are unwilling to take training are urged to consider the future when work will not be as easily obtainable as it is now, when the sympathy of employers will not be as keen as it is at present, and when a crippled soldier out of work will be little more than a disabled and inefficient man who is asking for a job which he cannot fill.

SPECIAL EMPLOYMENT FOR THE DISABLED

Disabled men can often be made capable of competing on equal terms with those who are sound. For that reason those who are

crippled should be taught occupations where special knowledge or where the special nature of the work will permit a well-trained man, though disabled, to compete unhandicapped with those who have the full use of their bodies. While training will permit many disabled men to compete in any field with those who are sound, it will be necessary to reserve for them certain occupations which can be easily performed by disabled men. Normal persons should not be engaged in such occupations. An excellent example of an occupation which should be reserved for disabled men is that of masseur. A blind man can massage as well as can one who sees. There are many things which a sighted man can do; there are few occupations open to a blind man. Posts as watchmen, as caretakers, as janitors, should be reserved, especially by the staple industries, for disabled men who cannot be fitted for better employment. Men who could fill such positions well, and for whom it is especially difficult to find employment, are the men, past middle age, who are illiterate and who have been disabled. Such men have never been more than laborers and their disability has taken from them the strength which was their only marketable usefulness.

There is a danger inherent in the reservation of specific employment for disabled men. It makes a special class of cripples; employments reserved for them cannot fail to become characterized as subnormal occupations. The tendency will inevitably be for remuneration offered in those occupations to be reduced. The tendency will be all the greater because men crippled in war service will be pensioners and therefore economically able to exist upon subnormal salaries.

No less important than the training of disabled men, and intimately related with it, is the placement of returning men. In finding employment for discharged sailors and soldiers great care must be taken to put them in places which they can successfully fill in competition with sound men when the war is over and the struggle for employment becomes keen. For this reason alone it is necessary for practical men who will not "put square pegs in round holes" to be in charge of returned soldiers' employment bureaus. France especially urges returned men to enter productive occupations; they are advised not to become scratchers of paper. Several nations maintain employment bureaus for returned men; there, side by side, on the same list are the names of officers and of men, of illiterates and of university graduates.

Treatment, training and placement are always mentioned in describing the rehabilitation of disabled men: there is a fourth factor and an important one. Returned men will doubtless form a new Grand Army of the Republic here, as they are doing elsewhere, for the purpose of watching over their own interests. It is not sufficient. The responsibility for making good to sailors, soldiers and their dependents the detriments which war has placed upon them, lies with the whole nation. Therefore it must be the responsibility of a governmental department to "follow up" and make certain that all continues well with the wards of the people. Returned men should be followed up to make certain that they have proper employment; orphans and widows should be followed up to see that they have faithful guardians and that their business interests are well managed. To do these things properly an organization which includes tactful and willing-handed people, trained in social service, as well as practical business men will be necessary. In order that the pensions awarded for varying injuries may accurately compensate for the disabilities resulting from them, it is necessary to carefully record that which actually happens to men suffering from the disabilities in question when they are thrown into civilian life. That is but one of the reasons which make it essential to carefully "follow up" the after-life of discharged men.

Rehabilitation touches national activities at many points. Because of its magnitude Great Britain, wisely, centers in a Ministry the administration of all things planned for discharged soldiers and for those belonging to them; similarly, in Canada, there is a Minister of Soldiers' Civil Reestablishment. In reviewing that which the United States has planned and is doing for the rehabilitation of her sailors and soldiers, deep admiration must be felt, both for the wisdom and comprehensive scope of her plans, and for the energy with which those plans are being acted upon.

THE INFLUENCE OF THE UNITED STATES

Quite beyond a friendly pleasure that all is well, Canada has a very real personal interest in that which is done in the United States. It is this: the form taken by the organization of the United States for dealing with rehabilitation will greatly influence the form which Canada's organization for that purpose will assume. The United States has one hundred million people; Canada has but

eight. There is much passage of ideas and of many other things between these two countries. It is inevitable that the convictions of the population of the United States should become part of the belief of Canada.

The United States is the largest by far of the English-speaking nations. That is worth repeating; there are more people who speak English in the United States than there are in the whole British Empire. Moreover, the people are well-educated; the proportion of illiterates is small. What is done in the United States has great influence in the world. For these reasons, reverent thankfulness is felt that the entrance of the United States into the war, and its conduct of the war proves that its ideals are at one with those of Canada.

Since 1776 a separate nation, the United States is now the most coherent of the peoples who live in the Grecian tradition of self-government. Adherence to that tradition was sealed by 1776. A century later, steadfastness in it proclaimed that "government by the people, and for the people shall not perish from this earth." But a few days ago, the same determination spoke again in Pershing's terse, "Lafayette, we're here."

MILITARY SURGERY IN 1861 AND IN 1918

BY MAJOR W. W. KEEN, M.D.

Medical Corps, U. S. A.; Emeritus Professor of Surgery, Jefferson
Medical College, Philadelphia.

The fundamental difference between the surgical conditions during the Civil War (1861-65) and the present World War (1914-18) is our ignorance in 1861 and the enormous increase in our knowledge since that date. Between these two dates is a veritable chasm of ignorance which we can only appreciate when we peer over its edge and discover how broad and deep it is. Doubtless in another half century our knowledge will have again outstripped our present knowledge as far as our present knowledge exceeds that of fifty years ago.

What has filled up and finally obliterated this chasm? Clinical observation has done much but research, and chiefly experimental research, has done far more. In chemistry and in physics the chief advances in fifty years have been made by experimental research. In biology and its subdivision—medicine—the same is equally true.

We had obtained the precious gift of anesthesia in 1846, so that surgery was robbed of all pain during operations. Largely as a result of this abolition of pain, instead of three capital operations in a month, as at the Massachusetts General Hospital during the five years preceding 1846, today an active hospital in civil life will report fifteen or twenty in a single day—four, five, or six thousand operations in a year instead of only thirty-six! The operations in our military hospitals in France are almost numberless.

THE ADVENT OF BACTERIOLOGY

But while anesthesia banished pain it had no influence on the terrible mortality following operations—often even the simplest ones. It was reserved especially for Pasteur and Lister to triumph over death. Their researches pointed out the way and the method. Pasteur's researches only won gradual assent in the late 60's and early 70's. Lister's first paper on antiseptic surgery was not pub-

lished until 1867, two years after the close of the Civil War, and his views were not generally accepted till the late 70's.

In the Civil War we knew absolutely nothing of "germs." *Bacteriology*—the youngest and greatest science to aid in this conquest of death—*did not exist!* It is undoubtedly the most important discovery ever made in pathology if not in all medicine. Yet even today when bacteriology is as demonstrably true as astronomy or chemistry, the opponents of research deny its discoveries and decry its methods. They even declare that germs do not produce any disease. They even deny the existence of typhoid fever as a disease!

As early as 1850 Davaine in France, in examining the blood of animals dead of anthrax, discovered certain little rods—"bacilli" in Latin, "bacteria" in Greek. Their presence was noted merely as a curious fact; but their significance, their causative relation to anthrax, was not even suspected. Repeated observations, however, showed that they were always found in the blood of animals dying of anthrax. When blood containing these little rods was injected into healthy animals, anthrax, and no other disease, always followed. The relation between these little rods and anthrax was finally and fully established.

As research proceeded, other germs were always found in other diseases and their causal relations were established in the same way. Year by year additional germs were discovered and by 1884 they had been classified and differentiated. In that year the word "bacteriology" was first used to indicate the science dealing with all classes of such germs. Not all are little rods. Some are small globular bodies ("cocci," *i.e.*, "berries"), others of spiral shape like a corkscrew ("spirochetes"); but the Greek word "bacterium" (plural "bacteria") has been extended in its meaning to include all these different physical forms while the Latin word "bacillus" (plural "bacilli") has been reserved for those which are strictly speaking little rods, some straight, others more or less curved.

Many bacteria are "good" bacteria which disintegrate rocks and originate and add to the fertility of the soil; other harmless forms simply cause putrefaction; still others, however, are the cause of diseases, each the cause of its own disease and no other. These are known as "pathogenic" or "disease producing" bacteria. Some of them are among the deadliest enemies of the human race,

e.g., the bacilli of tuberculosis, of the plague, of tetanus or lockjaw, of gas gangrene. Other bacteria produce pneumonia, cerebro-spinal meningitis, leprosy, cholera, infantile paralysis, etc.

Remember that bacteria lurk everywhere—in the air, on every physical object such as clothing, furniture, surgical instruments and dressings, on the skin of the patient, the doctor and the nurse, especially under the finger nails, unless all are “sterilized”—that is unless the bacteria on them are all destroyed. The means by which they are killed are either chemical (carbolic acid, corrosive sublimate, etc.) or by heat, *i.e.*, boiling or steaming for a certain length of time and at a certain high temperature.

THE CAUSE AND CURE OF TETANUS

Another and perhaps the most dangerous place in which these bacteria flourish—what might be called their favorite home—is in the intestines of man and animals. Many, *e.g.*, the bacillus of tetanus, exist normally in the *intestines* of horses and yet the horses are in perfect health. But if a horse be wounded and the bacilli of tetanus get into the *wound* and multiply, then he will die just as would a man into whose wound these bacilli gain access.

Hence it can be seen that on cultivated land over which horses, cattle and other lower animals and man himself have roamed, the soil is deeply infected with these fecal bacteria. France and Flanders have been cultivated and manured for 2,000 years and it is no wonder therefore that it is perhaps the most dangerous soil in the world. The almost virgin fields of battle during the Civil War held few bacteria and hence tetanus was not common though it was deadly, killing nine out of every ten victims. In the early days of the present World War it was a terrible scourge and took a fearful toll of lives. Exact figures can only be given after the war is over.

Fortunately, before the great war began, experimental research had discovered the tetanus antitoxin. As soon as there was enough of it for the huge numbers of the wounded, its ravages were checked. Few now die from lockjaw because every wounded man receives an injection of the antitoxin at the earliest possible moment. But those poor fellows who lie for hours or even days in “No-Man’s Land” often receive the protective serum too late and, therefore, often perish. As soon as the poison has combined with the nerve cells no amount of the antitoxin will do the least good. Every hour of delay means a life lost.

It can easily be understood how and why we surgeons in 1861-65, utterly unaware of bacteria and their dangers, in our ignorant innocence committed grievous mistakes which nearly always imperilled life and often actually caused death. May *le bon Dieu* forgive us our sins of ignorance. We operated in old blood-stained and often pus-stained coats, the veterans of a hundred fights. We operated with clean hands in the social sense, but they were undisinfected hands. To the surgeon, the spotless hands of a bride are dirty. We used undisinfected instruments from undisinfected plush-lined cases, and still worse, used marine sponges which had been used in prior pus cases and had been only washed in tap water. If a sponge or an instrument fell on the floor it was washed and squeezed in a basin of tap water and used as if it were clean.

Our silk to tie blood vessels was undisinfected. One end was left long hanging out of the wound and after three or four days was daily pulled upon to see if the loop on the blood vessel had rotted loose. When it came away, if a blood clot had formed and closed the blood vessel, well and good; if no such clot had formed then a dangerous "secondary" hemorrhage followed and not seldom was fatal. The silk with which we sewed up all wounds was undisinfected. If there was any difficulty in threading the needle we moistened it with (as we now know) bacteria-laden saliva, and rolled it between bacteria-infected fingers. We dressed the wounds with clean but undisinfected sheets, shirts, tablecloths, or other old soft linen rescued from the family ragbag. We had no sterilized gauze dressing, no gauze sponges.

At the Jefferson Medical College, Gross and Pancoast operated on the same table on which the cadaver was demonstrated by the professor of anatomy. Often the surgical assistants spent the morning in the dissecting room and at noon were assisting at operations or attending obstetrical cases.

In the adjoining building we had two small hospital wards of five or six beds each for men and women, for the most serious cases. Is it any wonder that when my teacher of surgery, Professor Gross, wanted pus to illustrate his lecture he would turn to the orderly and say, "Tomorrow, Hughey, I am going to lecture on suppuration. Go over to the hospital in the morning and get me a half tumblerful of pus!" And he always got it. Pus was always on tap. What was far more deplorable, erysipelas, tetanus, blood-poison-

ing, hospital gangrene were also "on tap." Death was ever peering over the shoulder of the surgeon, watching for his victim.

In the Civil War, lockjaw was not frequent but it killed ninety out of one hundred patients; compound fractures killed two out of every three; amputations averaged over 50 per cent mortality. Until the total statistics of the great war are collected—a work of years—we can only quote individual statistics. Of 1,000 cases of tetanus in the base hospitals in England, the mortality was only 40 per cent. Among these 1,000, forty had *not* received the antitoxin and of them 80 per cent died. Of the 960 cases which *had* received the antitoxin only 38.8 per cent died,—*i.e.*, less than one-half of the former.

Only 25 per cent of the cases of compound fractures are now fatal instead of 66 per cent as in the '60's. Four out of five amputations are due to infection. Our victory over infection is the reason for the greatly diminished number of amputations in the present war. Moreover, the mortality of amputations in our armies is low; in some series every one has recovered. Of the wounded, 80 per cent are soon able to return to the fighting lines.

In open wounds in our armies in 1861, as we knew nothing about antiseptics (and therefore used none) maggots, as large as chestnut worms, abounded in the summer. While utterly disgusting they did little or no harm. Now these are never seen.

Today how utterly different are our present methods. So rapid has been the progress, even in the last two years, that Harvey Cushing, writing me recently from France, said, "Even 1916 was another world."

IMPORTANCE OF DISINFECTION IN WOUNDS

As in civil surgery, the skin in the area of operation is carefully disinfected; beyond this area everything is covered with disinfected sheets or towels. The surgeon, every assistant and every nurse wears disinfected gowns and disinfected rubber gloves. Every instrument, dressing, needle and the silk and catgut used for ligatures to tie blood vessels and to sew up wounds are all sterilized. For years in my clinic, just before I began the first operation an assistant from the bacteriological laboratory took a scraping from the back and palm of the hands and from under the finger nails of myself and every assistant and nurse, to discover if any of us

had failed to have completely sterile hands and finger nails. I am glad to add that it was rare to find anyone at fault. Had anyone been repeatedly delinquent, warning or even dismissal would have followed.

During an operation, to touch anything not disinfected was *anathema maranatha*. Soon a surgical habit or instinct is acquired and avoidance of such contact becomes automatic. Fortunately the "septic glances" alleged to have been darted at the wound from a distance by one surgical cynic did no harm.

All ligatures on blood vessels are now cut off short and in non-infected cases the wound is immediately closed. The ligatures are absorbed and never heard from. Secondary hemorrhage is almost unknown. In one night after Gettysburg, I had five cases of secondary hemorrhage. From 1876, when I adopted the antiseptic method, till today I have not seen five other cases. In civil surgery, for years prior to 1914, practically all sterile wounds healed within a few days.

But in this World War, conditions in 1918 are far different not only from those of the Civil War and from those immediately before the war, but even from those from 1914 to 1916.

The present war is waged on and in densely infected soil; the wounds are caused by high explosives which hurl many irregular fragments with unimagined velocity; wounds are often multiple, even up to one hundred simultaneous wounds; the tissues are horribly lacerated and devitalized; fragments of the missile and of the dirty, muddy and highly infected clothing are often driven deep into the tissues; all these elements have conspired to develop an unprecedented riot of infection. Every wound is infected and with an intensity utterly unknown prior to 1914 either in civil or military surgery. The efforts to control infection by the means in ordinary use almost entirely failed during the first two years of the war. Tetanus, gas gangrene, blood poisoning and other infections seemed unconquerable for a time.

But research has won the victory. Lister's surgical principles have been at last even more firmly established than ever. The chemist and the bacteriologist are now constantly associated with the surgeon and together they have often snatched the crown from the brow of death. Carrel and others have shown that for, say the first six, sometimes even for the first twelve hours after a wound

has been inflicted, the bacteria—even the most dangerous—are localized on the tissues lining the wound and especially near any retained clothing or fragment of shell. The wound is “contaminated” but not yet deeply “infected.”

If the wounded can be brought to the surgeon within these few golden hours, even after very severe wounds, two out of three can be saved. But to effect this, first of all the most perfect aseptic care must be given; all missiles and especially all dirty and infected clothing must be removed, in finding which the X-rays are of the utmost service; by the knife the wound is opened to all its ultimate pockets and recesses, and the tissues lining the entire wound are cut away. With this removal of the tissues covered with bacteria, all the adjacent tissues which have been practically killed and devitalized by the fierce impact of the missile must also be removed. Then the wound can be closed at once and will heal immediately. The knife in such cases is by far the best antiseptic. The few bacteria left are destroyed by the cells and fluids of the body.

THE CARREL-DAKIN METHOD

But in those unfortunates who do not reach surgical aid promptly, even though the foreign bodies and the devitalized tissues be removed too often, the wounds by that time are so deeply infected that primary healing cannot be secured and other means of treatment must be used. Dakin, an English physiological chemist, now residing in America has found by research the means of depriving the cheap ordinary bleaching powder (sodium-hypochlorite) of its noxious properties; and Carrel, by prior years of work in the Rockefeller Institute and in France for four years, has devised a means for distributing this best disinfectant to even the deepest parts of the wound in a constant stream. The bacteria are rapidly destroyed. Every second day the bacteriologist examines the discharges from the wound and counts the number of bacteria found by his microscope. When they have practically disappeared the surgeon can then close the wound. Out of four hundred such wounds closed in Carrel's hospital at Compiègne—now destroyed by the barbarous Huns—there were only six failures.

There are several other methods of treatment which are used by many surgeons and with excellent results, but the lack of space compels me to pass them by. Of course very many of the wounded

are so mutilated that death is inevitable and the surgeon can only soothe the pain or possibly postpone the final result.

THE SANITATION OF TODAY

Sanitation fifty years ago was crude and unsatisfactory as compared with that of today. The chief reason for this was that bacteriology was utterly unknown and that research had not discovered any of the antitoxins nor the rôle of the insect world in spreading disease.

The opponents of research insist that "sanitation" is practically the only means by which the death rate has been lowered. It is amusing to realize that in insisting on sanitation they are commending and insisting on bacteriology, their *bête noire*. Engineering and chemistry have done very much to develop modern sanitation, but bacteriology has been the most important factor in this development. That pure water and pure milk have lessened typhoid is perfectly true. But how do we know pure water when we see it? Only by testing the water supply bacteriologically every week. Only a bacteriologist can decide whether milk is dangerous or safe.

In 1861 we were wholly ignorant of the fact that the mosquito, and only the mosquito, spreads yellow fever and malaria; and of the rôle of the fly in spreading typhoid fever by walking on the excreta of those sick of typhoid and then over our food and infecting it with the typhoid germs which we swallow with our food. We knew how disgusting and annoying were the louse and the flea, but we did not even suspect that the flea and the rat conspired to spread the bubonic plague, and that the louse was responsible for the deadly typhus and that serious and wholly new disease—trench fever.

Moreover, research has now provided us with antitoxins against typhoid, diphtheria, tetanus, cerebrospinal meningitis, and other diseases, and will provide us with still more.

THE REDUCTION AND CONTROL OF TYPHOID

Typhoid has been banished from our army. When we recall the figures for the Civil War and the Spanish-American War in contrast with the present war, the American people should be infinitely grateful to the patient, persistent and much abused research workers in our laboratories for their humane and beneficent work.

The bacillus of typhoid was only discovered in 1880, fifteen years

after the Civil War. During the Civil War there were 79,462 cases and 29,336 deaths from typhoid. In the Spanish-American War, out of 107,000 soldiers in our whole army, there were 20,738 cases and 1,580 deaths from typhoid. Every fifth man was attacked. Of the entire number of deaths during this short war, including both those from disease and from wounds 86 per cent were due to typhoid alone!

In the present war as in the case of tetanus, the use of the preventive antitoxin has enormously reduced the number of typhoid cases. The Germans had prepared many great hospitals for the confidently expected typhoid patients. Typhoid was conquered. These hospitals were never used for typhoid patients, but were devoted to other purposes.

The recruiting of our army was in the autumn of 1917, the very season for typhoid, with men in numbers fifteen times as many as in the Spanish-American War, and in a period exceeding in length the whole duration of that war. The following figures have been furnished me by Surgeon General Gorgas:

In the entire army, numbering over 1,500,000 men at the end of December, 1917, there had been during the year 242 admissions to hospitals on account of typhoid fever, with 18 deaths. During the corresponding period in 1861, when the Northern Army was being mobilized, there were about 9,500 cases of typhoid fever with less than one-quarter of the strength of the present army with about 1,800 deaths.

Had the rate of the Civil War prevailed in 1917 there would have been 38,000 cases and 7,200 deaths, instead of 242 cases and 18 deaths. Had the rate of the Spanish-American War prevailed there would have been over 311,000 cases and 23,700 deaths instead of 242 cases and 18 deaths! In the annual reports of the surgeon generals of the army and navy this enormous and happy prevention of typhoid is attributed "almost in toto" to the antityphoid vaccination. In the British Army 99 per cent of the soldiers are vaccinated voluntarily.

During the past year, of the 1,500,000 vaccinated men, about 9,000 were obliged to spend one or two days in hospitals on account of a moderate resulting fever following the vaccination. During that same year there was just ONE death ascribed to antityphoid vaccination—one death out of over 1,500,000 men—one fifteen thousandth part of one per cent! Yet the opponents of research have intimated that "thousands" of deaths have followed the anti-

typhoid vaccination. Are not these figures an overwhelming testimony to its value and do they not prove the wisdom of making it compulsory in order to save the lives of our dear boys, and help win the war?

These same people have also asserted that the death rate in the army far exceeded that of our large cities. General Gorgas states that on the contrary statistics for men from 20 to 30 in our large cities show that the army death rate in July 1918 was only one-third of the urban death rate, *i.e.*, 1.9 per thousand instead of 6.7 per thousand. It is time that these malicious mis-statements should cease.

Never in the history of the world have such splendid efforts been made to reconstruct and re-educate the inevitable wreckage of war, as are now effectively restoring the wounded and mutilated to happy social life and to self-support instead of abandoning them to idleness, poverty and despair. The dentists and surgeons reconstruct faces and jaws formerly considered absolutely hopeless. "The surgeons doing this facial work avail themselves of the services of artists, plaster modellers and sculptors. An accurate plaster cast of the present condition is used as a base on which a restoration is made in modelling clay by the sculptor. If good photographs of the man taken before his wound are available, they are of service to the sculptor." The orthopedic surgeons restore motion to apparently useless arms and legs, so that the man can be employed in gainful occupations and become partially and often wholly self-supporting. Such work was unheard of in the Civil War. It is one of the real benefits to the credit side of the great war.

NEW INSTRUMENTS OF PRECISION AND METHODS OF DIAGNOSIS

I must compress into a few words what I have to say as to new instruments of precision and new methods of diagnosis which have been discovered since the Civil War.

It will surprise most of us to learn that there were practically no clinical thermometers in our armies in 1861-65. The first book ever written on the use of the thermometer in medicine was not published until 1869—four years after the end of the Civil War. Imagine the plight of a surgeon, physician, obstetrician, or even of the mother of a family today without a clinical thermometer. Hemostatic forceps, retractors and dilators, now in constant use, were utterly unknown. The hypodermic syringe was so new that

the number of army surgeons who had one in Civil War times probably did not exceed the number of one's fingers and quite surely not of fingers and toes together. The ophthalmoscope had been devised in 1851 but few and far between were those who could use it in our army ten years later. This was even more true of the laryngoscope, first devised in 1858.

Instruments for examining all the accessible hollow organs, the ear, the nose, the bronchial tubes in the interior of the lung, the stomach, bladder, ureter and kidney, were not so much as dreamed of fifty years ago. The chemistry and physics of the blood and the various devices to study the blood pressure were unknown. Now we can analyze the action of the heart, of its four cavities and its valves separately to the exact action of each during the 1/50th part of a second by the electrocardiograph.

The wonderful X-rays were discovered in 1895 and the apparatus for using them has been so much improved that now we can see the convolutions and the cavities in the brain. By mixing bismuth with the food and then tracing it from esophagus to rectum by the X-rays, we have learned much as to living anatomy and physiology, and can often diagnose cancer of the stomach or of the bowels, can see any foreign body either in the stomach or intestines and in the windpipe or the bronchial tubes. Chevalier Jackson, one of my colleagues at the Jefferson, has taught the world how to remove such foreign bodies from the air passages through the mouth instead of by a very dangerous cutting operation.

The surgery of the chest long lagged far behind that of the head and the abdomen because when the chest was opened the lung collapsed and breathing became embarrassed, or impossible, if both sides were opened. Now Meltzer and Auer of the Rockefeller Institute have devised a method of anesthesia by pumping ether-laden air into the lungs through a rubber tube introduced into the windpipe. This keeps up the respiration and we can now operate on all the organs in the chest as easily as we do on the contents of the abdomen.

"The road to the heart is only a little over an inch in a direct line," says Professor Frederic S. Lee, "but it has taken surgery nearly 2,400 years to travel it." The heart was first laid bare and sewed up for a stab wound twenty-one years ago (1897). Now this operation has been done hundreds of times and has saved the lives

of about half of those operated upon. In this war, missiles have been removed from the interior of the heart and even from the large blood vessels.

Most of the improvements and the discoveries I have described and many others have been made in research laboratories and largely by men whose name and fame are unknown except to their professional colleagues. Their work has been marvelously successful and beneficent not only to man but to millions of the lower animals whose sufferings have been enormously diminished and whose lives have been saved—a combined humanitarian and economic gain which can hardly be estimated.

One striking instance of the value of experimental research as compared with observational and clinical research is the following:

Syphilis has been known and carefully studied for over four hundred years. It is one of the three great physical enemies of the human race, tuberculosis and alcohol being its sister scourges. In 1903 Metchnikoff of the Pasteur Institute in Paris first succeeded in inoculating the higher apes with the disease. Since then we have learned how to inoculate other animals. Only two years passed before bacteriologists discovered the germ which produced the disease. This enabled us to test any and every remedy, even the most dangerous, far too dangerous to be tested upon man. After five more years Ehrlich discovered a cure. This discovery rewarded a persistence and zeal the like of which has never been equaled. After six hundred and five successive failures, the six hundred and sixth was a success. Think of the labor required by each one of these six hundred and five failures and of the robust optimism which still continued the research!

In these seven years we learned more and accomplished more for the human race at large than in the preceding four centuries of intense clinical study. This discovery is one of the most beneficent ever made. Its use is far from being restricted to the sinners against law and morality. The number of its innocent victims is almost incalculable. Now we are masters of the situation; we have the whip-hand of this monster of suffering and shame.

Even in this very incomplete sketch what wonderful progress is revealed! Research has not yet ceased to give us better and better methods of coping with disease and death, and—thank God!—it never will cease so long as disease and death continue to afflict the human race.

TUBERCULOSIS AND THE WAR

BY CAPTAIN JOSEPH WALSH,
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How much will tuberculosis make for inefficiency in the Army? Will the war actually increase the amount of tuberculosis? What does the government intend to do with its tuberculous soldiers? All are questions of present interest.

There is no disease which could make for greater inefficiency among soldiers for the reason that it is distinctly a disease of young adult life, and, developing insidiously, makes the individual incapable of performing his duties without his recognition of the cause. It is evident, therefore, that it is worth while endeavoring to spot it early so that the tuberculous soldier may be dealt with according to his condition; relieved from duty if unfit and put into a selected position if capable of carrying it off without danger to himself or others. To accomplish this has required a very large corps of extremely expert examiners capable not only of diagnosing the case, but also of judging what might be expected of it. For an army of 3,000,000 men, 400 to 500 such examiners have been found necessary.

We were fortunate at the beginning in having a number of physicians sufficiently expert in tuberculosis that, though they had never examined men with the requirements of the army before them, they were capable of doing it with a certain degree of efficiency. More fortunately, however, than even our possession of these civilian experts, we had at the head of the tuberculosis work in the army a man who had never spared himself in its study, and when the war broke out, he was a master in the technique of diagnosis and his capability in demonstrating it to others was very marked.

Colonel Bushnell, of whom I speak, was the Medical Chief of Fort Bayrad Sanatorium for about twenty years. Here his opportunity for the study of the disease was unrivaled and he took advantage of it. Instead of sitting down in what could have been made an easy berth, he astonished his acquaintances by his extraordinary initiative and industry. Friends of his state that while others were

enjoying evening recreation he was still in the wards with stethoscope in ears listening for "adventitious sounds." Rarely is good work done in vain, and Colonel Bushnell's has proved no exception. A time came with the outbreak of the war when the care and study put on his cases for years were made to count in the production of what we hope and expect will be the most efficient army ever put in the field. No man at the head of a department of the United States Government was more fitted for his particular task. He was a trained soldier, accustomed to giving orders and capable of seeing them carried out; he was a trained technician in the art in which it was necessary to rapidly train others; and he understood just what constituted army fitness.

While the first of the recruits were being trained, civilian examiners throughout the country were allowed and encouraged to do the best they could, the Surgeon General's Office endeavoring with the small corps of special experts at its disposal to review their work. In addition, with the knowledge of what was required and the realization that those requirements were not sufficiently well understood, the Surgeon General's Office issued Circular No. 20 prepared by Colonel Bushnell for the purpose of standardizing the diagnosis of tuberculosis.

To support and explain this important standardization, Colonel Bushnell, though sixty-five years old, had divided himself between his office in Washington and the even more arduous work of visiting the camps and attending medical meetings in addition to writing for numerous journals. Though everyone recognized the importance of standardizing the diagnosis, some thought this standardization too absolute and it required time and patience to educate them up to certain new ideas which he had been instrumental in either discovering or promulgating. Yet after thoroughly understanding Bushnell's methods and the enthusiasm for them in general, Surgeon Lawrason Brown and Major Joseph Pratt, who were among the early examiners (*The Military Surgeon*, August, 1918) say, "The great value of Colonel Bushnell's instructions was manifest daily in out work and we would have been hopelessly engaged in argument had we not possessed them." And again, "We cannot praise too highly Bushnell's rapid auscultatory method in tuberculosis examinations."

To complete this work begun by Circular No. 20 and furthered

by Colonel Bushnell's addresses and writings, special tuberculosis schools have been opened in which physicians with more or less knowledge of tuberculosis are further instructed. The original teachers in these schools, themselves experts, were instructed under his personal supervision in the Walter Reed Hospital in Washington and it is this instruction which they are now passing along. There is no disease in medicine requiring more capability in diagnosis, yet through methods for which Colonel Bushnell is considerably responsible, this capability is being imparted to a number of physicians with comparatively little experience in so thorough a fashion that it is evident if more active tuberculosis exists after the war there will be a much larger number of physicians to cope with it.

Previous to the war, the United States stood among the first in its anti-tuberculosis work and its tuberculosis mortality was among the lowest of the nations. Regretfully though we may say it, the mortality in France was among the highest, as can be seen from the following statistics of Fishberg; the death rate in Rio de Janeiro is 402 per 100,000; in Philadelphia, 206; in Chicago, 162; in Paris, 374. In addition, therefore, to having little or no time at the beginning to make examinations, France had actually more tuberculosis. It is to be expected, therefore, that a much larger number of her soldiers were sent back from the front than will be of ours, yet according to Colonel Dercle (*The Military Surgeon*, June, 1918) during the first three years of the war, only 89,430 were discharged from the French army for this disease. Of course it is to be remembered that her army had been under arms for years and was to a considerable extent picked and chosen before the war. Still, considering that we have so much less tuberculosis in our population, and the greater time we had for examinations together with the fact that in the first three years France probably had six million men in the field, it is evident that our tuberculosis inefficiency will be minimal.

Will the war actually increase the amount of tuberculosis? The strenuousness of the life in training, and especially in the trenches, is such that tuberculosis ready to become active is almost sure to break down, yet Colonel Bushnell's work has been so thorough that I personally believe the number of reactivations is going to be small. Moreover, it is evident from even our small experience so far that the routine open air life of training will cure, and has already cured,

a certain number who would probably have gone on to a breakdown in their civilian occupation.

The "bug bear" of the popular mind is the possibility of contagion, but from a scientific aspect is so remote as to scarcely deserve consideration. We now know that the great majority of tuberculous infections, even when first manifest in adult life, were contracted during childhood and that the adult is only slightly susceptible to contagion. In addition, the examinations are so carefully made that though we can imagine a small number of active cases slipping through, this number will be so small and the number with tubercle bacilli in the sputum which would be necessary for contagion, so much smaller still, that this question is negligible.

It is probable, however, that the increased work necessarily put on the civilians remaining behind will reactivate a number of cases which would have remained inactive if the war had not occurred. Between the activities of the camp, therefore, and the increased activities of civil life, in other words, through the instrumentality of the war, the number of cases of tuberculosis will be undoubtedly increased. Regretfully, therefore, it has to be confessed that tuberculosis will be a greater problem after the war than before it.

Without fear that tuberculosis will be a real menace to our fighting efficiency, we have still the question before us—What does the government intend to do for the thousands of men whose disease does become reactivated while serving their country? Though every effort is being made, as we have just shown, to have this number as small as possible by care in examination, the elimination of the unfit, and the proper selection of positions for the suspicious, the smallest number we can conceive will still be more than 20,000 or 30,000. The question is easily answered and with satisfaction, for no nation has ever attempted a more elaborate scheme for the rehabilitation of the sick and wounded.

In spite of the fact that the most important work at the present time is the winning of the war, and everything else must give way to it, an independent department of reconstruction has been inaugurated by the Surgeon General with Col. Frank Billings at its head. In addition, in the different divisions of the Medical Department, men of the highest rank are devoting special attention to it and are not only making theoretical plans, but are submitting these to the public in medical articles, both for the purpose of showing what is to be expected and of learning through criticism other points of view.

While at Fort Bayard Sanatorium developing his new diagnostic signs, Colonel Bushnell had associated with him for a number of years Lieut.-Col. E. H. Bruns, to whom are due some of the methods, notably the lagging of the expanding lung. At the outbreak of the war, Bruns became naturally associated with Colonel Bushnell in Washington and both have found time to devote special attention to the reconstruction of "soldiers wounded with tuberculosis." (*Journal of the American Medical Association*, August 3, 1918.)

The following from the Surgeon General's Office gives us our cue as to what is to be done. "Hereafter, no member of the military service disabled in line of duty will be discharged from the service until he has attained complete recovery or as complete recovery as is to be expected that he will attain when the nature of his disability is considered." (Colonel Bushnell: How the United States is Meeting the Tuberculosis War Problem. *The Military Surgeon*, August, 1918.) This indicates that the government intends to make the tuberculous patient as fit for work as possible before discharging him. To accomplish this the following tuberculosis hospitals have been taken over or have been built by the government.

The William Wirt Winchester Memorial Tuberculosis Hospital at New Haven, an absolutely new building just completed with a capacity of 250 beds and expanded by the erection of temporary buildings for ambulatory cases to a capacity of 550. This is a beautiful modern structure on the hills near New Haven and is at present used not only as a hospital but as a school for the instruction of student medical officers. This hospital and school are under the direction of Lieut.-Col. A. M. Forster, formerly medical director of Cragmoor Sanatorium, Colorado and Eudowood, Maryland, and the instructors in diagnosis in the school are Lieut.-Col. Estes Nichols, Major James Price and Captain Francis Trudeau.

The Otisville Sanatorium, New York, with a capacity of 750 beds, a recently erected temporary structure not far from the New York City Sanatorium.

The Azalea Sanatorium, North Carolina, with a capacity of 1,000 beds, also a temporary structure.

The Denver, Colorado, Sanatorium with a capacity of 1,000 beds, a new permanent structure of hollow tile, built in the most modern fashion.

Markleton Sanatorium, Markleton, Pennsylvania, with a capacity of 325 beds.

Waynesville Sanatorium, South Carolina, a hotel transformed, with a capacity of 260 beds.

Whipple Barracks Sanatorium, Arizona, with a capacity of 500 beds.

Fort Bayard Sanatorium, New Mexico, with a capacity of 1,000 beds. All of them have completely equipped laboratory, X-ray, surgical, throat, nose, ear, eye, and dental departments. In addition all are capable of further expansion.

In these sanatoria, the tuberculous soldier is to be taken care of by experts until he is well enough to pursue his ordinary occupation without fear of a breakdown, or if his condition has become such that his previous occupation is no longer possible, he will be instructed in an occupation suitable to his present capability. In these sanatoria, a special department of reconstruction has been instituted in which the capabilities of the men, from both a physical and mental aspect, are carefully considered and work assigned to them accordingly.

This work, begun when the patient's condition warrants it, is expected to have influence in four ways: (1) It will occupy the patient's mind, make him more contented and hence hasten his recovery; (2) instead of sending him out from a life of absolute ease, it will harden and make him less likely to breakdown, on account of unaccustomedness and strain; (3) the disease almost always produces more or less inefficiency, that is, after a certain amount of lung space is destroyed the individual is not as capable as before; the reconstruction department is endeavoring to compensate for this by educating him,—here for instance is a presser who knows nothing about tailoring, he is taught tailoring, thereby making him more useful to his employer; (4) foreigners and natives unable to read and write are taught. This improves their efficiency and gives opportunity for wider diversity of work and pleasure consistent with their condition.

Regulated work for convalescent tuberculosis patients is not new. It has been carried out in other sanatoria like White Haven, Pennsylvania, and Frimley, England, but never on a basis similar to this and never in connection with military discipline. We cannot help but expect, therefore, the best results possible in the government's treatment of its tuberculous soldiers.

RECLAMATION OF THE DISABLED FROM THE INDUSTRIAL ARMY

LIEUT.-COL. HARRY E. MOCK,

Medical Corps, U. S. A.

The United States, following the example of other warring nations, has adopted a plan to physically reconstruct, functionally re-educate, and completely rehabilitate all of her disabled soldiers. Congress, in June, 1917, pledged this service by passing the War Risk Insurance Act. The necessity of conserving our man power, as well as the debt which the nation owes these disabled soldiers, makes such a program obligatory.

By physical reconstruction is meant the continued and complete medical and surgical treatment until the greatest possible restoration of the disabled parts has been secured. Functional re education consists of various methods to restore function in a disabled part, or to train other members to new work, or to teach the amputated cases the use of artificial members. In other words, it is combining with our surgical procedure, which aims at his physical repair, certain other therapeutic measures which will help the patient to functionally overcome his handicap.

Rehabilitation, or the refitting of the disabled man to an independent economic position in society, consists of measures which are neither medical nor surgical but which can often begin during the course of his medical treatment. Thus, the work of rehabilitation laps over into the hospital treatment and, in many cases, continues for an indefinite period after the work of the medical officers has been completed. In the majority of cases the functional re-education, especially the occupational therapy, can be made so practicable that it will dovetail in with the rehabilitation work.

Therefore, while a portion of this work must be conducted while the man is under military control, and a portion must be carried on after the man becomes a civilian, yet, as far as the man himself is concerned, it will be a gradual, unbroken reclamation to a useful life whatever his handicap may be.

No matter how honorable the wounds or how honorable the disease that overtakes one, no man likes to be classed as "disabled."

It sounds too much like being "put on the shelf." In warfare, however, a certain percentage of the soldiers are bound to become disabled; very few need remain so. The number of disabilities sufficiently serious to place a man in the discard are very rare. Practically every man, no matter how handicapped he may be, can come back. In fact a handicap puts more fight into a man, makes him strive harder than ever before, and results quite often in his making good to a greater extent than if he had never been disabled.

A soldier who lost both legs recently said: "Watch me! I am going to make good with both feet." And he has. This is the spirit! Determination and grit—stick-to-it-iveness—are the qualities which every disabled man must have or must acquire in order to crawl out or jump out of that hated class—The Disabled. As long as the brain power of a man remains, enabling him to will, to choose and to persevere in effort, he is a long way from being a permanent cripple or a permanent invalid.

As Mike Dowling, who lost both hands and both legs when a young man and climbed up to be a bank president in spite of his physical handicap, delights in saying: "I feel sorry for a cripple and thank God that I am not a cripple. A man may be worth a hundred thousand dollars a year from his neck up, and worth only one dollar and a half per week from his neck down." In other words, being "disabled" is only a temporary state. A man is disabled in the early days while the doctor is helping cure him. Being "crippled" is a permanent state. A man is crippled only to that extent to which he allows his physical handicap to put him down and out. If he ceases to be an economic factor in society—an earning, serving unit—he is a cripple. But if in spite of his handicap he overcomes his disability, trains himself for work and becomes a productive citizen once more, he is no longer classed as a cripple.

A man living in Kansas, who had been confined to his bed for years, the result of a form of paralysis, had become the owner and superintendent of a large publishing business. He was a printer formerly. When asked to describe how an invalid in his condition could accomplish so much, he said: "I am not an invalid: I am a Business Man." His advice was that no matter how permanently disease ties up the body, keep the mind alert and active. Make it work for you. Become independent. The man who gives up to

his disabilities is an "invalid"; the man who overcomes them is a force.

As a nation we have failed to teach such ideas as these to our boys and girls. We have failed to help our citizens who have become permanently handicapped back to the road where they can go on by their own initiative. Too often the disabled man has passively accepted his fate, and his friends have allowed him to loaf, or to accept a position where no incentive or future existed, such as the proverbial watchman. These cripples and invalids, seeing the money made by professional beggars, have even drifted into that class. Every nation in this war has awakened to the fact that some men with the worst kinds of handicaps have become successful, useful citizens. Therefore, why cannot all men and especially the soldiers disabled because of war duty become successful? And so with one accord these nations have provided the means of reclaiming their disabled soldiers and of giving them proper training for the future so that they can make good by their own efforts. The medical department of the army at the very beginning of this war began to make plans for reclaiming these soldiers. After other wars our country provided soldiers' homes for many of the disabled, or provided pensions to help the crippled man eke out a living at some mediocre job. The spirit of young America today would not be satisfied with such an arrangement. They have made the great sacrifice for their country in her efforts to give liberty to the world. Their country therefore must provide a future of liberty and independence for them. Thus backed by every branch of the government and cooperating with other agencies who have a part in the work, the medical department of the army has evolved the plans for the physical reconstruction and rehabilitation of disabled soldiers.

There is another soldier, the industrial soldier, the soldier of the second line of defense, the man who belongs to that great industrial army which is just as essential to the winning of this war as is the military army, and the man who becomes disabled and wounded without the glorification that comes from such wounds when received on the battlefield. During the last decade a new specialty has developed in the medical profession which deals with the human maintenance in industry. This must not be confused with the work of the old-time company doctor which consisted chiefly in

rendering emergency treatment to the injured employees. Rather this new specialty of industrial medicine and surgery includes everything necessary for the complete supervision of the health of the employees. Human maintenance in industry consists in applying the general principles of medicine and surgery to a large group of people as a unit. While individuals receive special medical or surgical care whenever needed, yet the chief purpose of this specialty is prevention: prevention of disease or accidents among the entire group of employees; prevention of undue loss of time when injury or disease assails an employe; prevention of deformities and permanent disabilities; prevention of inefficiency on the job when traceable to some physical condition; in fact, the prevention of everything which would tend to undermine the physical or mental welfare of the working force. In order to accomplish this, many of our largest industries have developed a staff of capable physicians and surgeons who spend part, or all, of their time at the plant. Here, by being on the job—in the front line trench of industry—they are not only in the strategic position to study and apply every phase of prevention, but also to render immediate and proper medical and surgical care to every sick or injured employe, which after all is only another form of prevention.

This comprehensive system of industrial medicine and surgery has been adopted by many of the larger employers. Today approximately one-tenth of the workers of the country are receiving the benefits, to a more or less degree, of this work. There still remain however many more large concerns, the small employer, the householder with his domestic help, the farmer with his hired men, and many others who have never considered it a duty to safeguard the health and welfare of those working for them. When we consider that 40,000,000 people in the United States are engaged in gainful occupations, we can then comprehend what the adoption of a nationwide program of disease and accident prevention would mean to the economic existence of our country.

But in spite of all our prevention methods, we have, and will continue to have, the disabled employe in our midst. The man who is no longer able to continue at heavy work because of a damaged heart or circulatory apparatus; the man who develops tuberculosis, and, even though cured, is afraid to or advised against returning to his former occupation, or is rejected from one job after another be-

cause of his damaged lung; the epileptic who, to safeguard the concern against possible compensation, is fired as soon as his condition is known; the men with hernias, with flat feet and many other anatomical conditions that make them inefficient, as well as the armless and legless and others seriously handicapped, the result of injuries;—all make up our army of disabled men. Every year adds to the total of incompetents who, on account of disease or accidents, are prematurely thrown into the scrap heap because their handicap prevented them from continuing at their old occupations.

A few industries have salvaged these disabled and made them efficient and independent. Some industries have given these employes easy jobs where they could make a living. But the very softness of the job robbed them of all incentive, and the bitterness engendered from dying ambition added to their incompetency, so that many of these drifted on into the scrap heap. Other industries settled with their injured workman when they were legally responsible and then dismissed him. Their disabled, for whom they were morally responsible, were scrapped without a settlement. These men, trained for certain occupations, who meet with permanent handicaps, are the waste products of our industrial life. Too often when employed, they are ineffective because they are thrown into the job without considering their physical fitness for it. Again they are given the positions of watchman, flagman, messenger service, porters and similar work when, with proper training, their full mental energy and remaining physical capacities could make them highly efficient in much more gainful vocations.

The most unfortunate group of disabled men are those who cease to be employed by the concern responsible for their disability. Other employers are not interested in them, do not feel responsible for them. They drift from one job to another, constantly dropping into a lower scale, until finally they relinquish all effort to work. These make up the loafers, the beggar on the corner, the shoestring merchant on the street, the poor physically handicapped, the mentally debased flotsam and jetsam of our civilization. The great lesson, therefore, which industry can learn from the plans of the army to reclaim the disabled soldier is the complete rehabilitation of the disabled from the industrial army.

We have done excellent work in prevention. We have done our utmost to physically reconstruct the disabled employe. But

have we not been neglectful of the end result from the economic and social standpoint? These handicapped soldiers from industry must not only be physically cured, but they must be retrained for new work when their disability prevents return to the old job; they must be given suitable employment in a position that affords them equal income and the opportunity for initiative and advancement; adequate compensation must be paid them for disabilities directly the result of occupation, without derogatory reaction upon their future opportunities; and proper supervision must be maintained over them to see that their rehabilitation is completed and so remains.

Today, as a result of our plans for the reclaiming of the war disabled, the country is awakening to its responsibility toward the civilian disabled. There is every reason to believe that before long Congress will be enacting a law for the vocational rehabilitation of the industrial handicapped just as it is now meeting the same question for the disabled soldier. Man power will win this war, man power at the front over there, and man power in the great industrial army—the second line of defense—over here. As a nation we are united in one great purpose—our determination for an unconditional victory. Our every motive must be toward this end. Therefore every effort expended for the conservation of human life and the reclamation of all human energy in both the military and industrial armies will be of the greatest aid in achieving this victory.

RECONSTRUCTION OF DEFECTS OF HEARING AND SPEECH

BY LIEUT.-COL. CHARLES W. RICHARDSON,
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The reconstruction of defects of hearing and speech is organized along the general plan and scope of reconstruction in general, as it has been taken up in connection with the activities of the Division of Physical Reconstruction, Surgeon General's Office.

The object and scope of the administration of these patients is to give them a maximum of physical reconstruction, so that each can be restored physically and mentally to the highest degree functionally that is possible in his handicapped condition. While this physical reconstruction is going on, such treatment is to be employed as to place him economically on as near a perfect basis, when he is discharged, as he was before he came into the service. This is the axiom of the policy and ideals of the Division of Physical Reconstruction.

The administration of this section is under the direction of Lieut.-Col. Charles W. Richardson of the Division of Physical Reconstruction. The assistant is a major, a liaison officer between the Division of Physical Reconstruction and the Section of Otolaryngology, Division of Surgery of the Head.

In order to make efficient the treatment of these patients, it became necessary to enlist therapeutic aides, who had an extensive training in the methods to be employed in the treatment of the adult deaf and in corrective speech work. We have been very fortunate in this section in being able to enlist a large number of most efficient aides in this particular line: in fact, we have listed as candidates the most efficient, capable and intelligent of those engaged in this particular line of therapeutic endeavor.

We have been most fortunate in the selection of our staff. It was a selection in which an error might easily have been made, one which could have been costly to the organization. The superintendent, principal and teachers in connection with this therapeutic endeavor have not only been of the highest type, mentally and

morally, as well as thoroughly skilled, but they have been so thoroughly enthusiastic in the line of treatment, so thoroughly unselfish in their devotion to the work, and so thoroughly imbued with their responsibility in recalling and reclaiming these men, that they have instilled in their patients the same zeal and enthusiasm. The work has progressed far beyond the most sanguine expectations of those interested in its development.

We find that our cases are subject to two types of treatment. One is purely surgical and medical, due to various lesions of the auditory apparatus and speech organs as well as those having, conjointly with these, other types of disabilities which also demand special lines of medical and surgical treatment. All cases of this type are placed more or less under the medical and surgical attention of the General Staff or the Otolaryngological Staff of the hospital to which the Section of Defects of Hearing and Speech is attached. Besides this we have another type of treatment which is both therapeutic and pedagogic in character. Under this form of treatment come all of the cases which have been mentioned above, as well as a few others which do not require active medical and surgical care.

Therapeutic aides are employed for the purpose, first, of stimulating the impaired hearing function through the auricular method of treatment. This line of treatment is employed for the purpose of stimulating the cerebral auditory center and the temporarily inactive nerve; of restoring synapse between the cerebral centers and the peripheral distribution of the nerve; and of stimulating those cases in which there is simply want of activity in the receptive mechanism. Second, they are employed in that therapeutic endeavor which has for its purpose the employment of one sense to replace the activity of another sense which has been lost through disease or injury. Through the use of speech reading, patients are taught to replace the lost sense of hearing by that of sight.

Besides the auditory cases, we have also a smaller number of patients in which there is more or less impairment of ability to express their thoughts, on account of impairment in the mechanism of speech. Classified under the defects of speech requiring treatment are those affected with:

Mutism, most frequently of shock origin.

Stuttering, stammering, old cases reestablished, new ones produced during the nervous strain of actual combat.

Pure aphonia, of nervous origin.

Aphonias, which are due to over-exercise and overstimulation of the vocal cords, giving rise to a pure physical disturbance within the vocal region. These arise from the over-use of the voice, as when an individual under nervous excitement frequently calls out in a loud tone of voice.

There is also a class of cases due to gunshot, shrapnel, grenade, bayonet and other wounds of the upper air tract. It is to be hoped that we will not have many of this type of case, now that trench warfare seems to have been reduced to a minimum. These lesions, with alterations in the voice, were very frequent during the early stages of the war, when trench warfare was the common combative procedure.

Classified into defects of hearing are those who are nearly deaf, or completely deaf. Of course, this brings into our service a large number of individuals who obtain this near deafness in manifold manners. We have those due to the ordinary diseases of the ear common in civil life—abscess of the ear, both acute and chronic, and acute and chronic catarrh of the middle ear. These are simple infections or secondary to the acute infectious diseases. Many individuals suffering from this type have been admitted into the army with the initial stage of this condition already manifest, or in full activity at the time of admittance into the service.

Those due to warfare are the following: 1. *Shock concussion*. This type of case is most frequently due to the action of a single high explosive shell in the immediate vicinity of the one affected. Many of these patients eventually recover their hearing completely. 2. *Concussion deafness*. These cases are usually due to the continuous action of high explosive and shrapnel shell, hand grenades and the more or less continuous play of rapid-fire and machine guns. On account of the continuous concussion transmitted to the labyrinthine structure, there are evident organic changes produced in the internal ear, with the result of permanent impairment of hearing. 3. The slowly progressive type of concussion deafness as commonly observed in gunners and artillery men. 4. Traumatic, due to casualties about the face, head and auditory apparatus. 5. Those due to infections contracted in warfare,—epidemic meningitis, mumps, etc.

After a period of nearly four months, in which the organization theoretically was placed in perfect preparation, this section was given a temporary abode in General Hospital No. 11, at Cape May,

New Jersey, for the purpose of carrying on its activities. On July 23, the activities were inaugurated at General Hospital No. 11, Cape May, N. J. This was presided over by the commanding officer of the hospital, Col. Paul F. Straub, who made the introductory address, which was followed by a few remarks as to the organization of the section by the director of the Section of Defects of Hearing and Speech. The address of the evening was made by Major W. W. Keen of Philadelphia, who made his topic, "The Comparison of the Surgical Methods of the Civil and the Present War."

The following morning, the actual treatment was started, with seventeen patients. Of these seventeen patients we found four recalcitrants, who could not see any reason why this type of treatment should be carried on. They felt that all had been accomplished that was possible, and they thought that they should be discharged without any further effort being made to place them medically and economically in a better position. Before the end of the first week of treatment, three out of the four patients, after seeing the enthusiastic swing with which the treatment was going on, after noting the progress that their fellows were making, after observing the whole change in the demeanor of their fellows, rapidly fell into line and accepted the benefits that the Surgeon General had placed at their disposal. These patients at the present day rate as the most successful and enthusiastic of those under treatment.

The disturbance of the auditory apparatus, terminating in immediate or remote complete and permanent impairment of hearing, is one of the most impressive and distressing among the disabilities that occur during warfare, to an otherwise physically normal man. In our study of the permanently acquired deafness in the adult in civil life, we have been impressed with two important features (not physical) apparently correlated with the loss of hearing, that is, suspicion and social ostracism. These conditions are in no way physically related to deafness, but are more the outcome of the psychology of the deaf mind and the psychology of the non-deaf mind. The deaf person, not hearing what is said about him, becomes necessarily more or less suspicious that general conversation is directed at him personally or relates to his infirmity. We are all well aware that most normal hearing persons have an aversion towards conversing with the hard of hearing or deaf. Add to the

state of mind thus created the torment of the various physical subjective symptoms, and you necessarily create in the deaf an unhappy state of mind. Contrast a person so afflicted with one afflicted with blindness. The blind has a serene mind born of the knowledge that all mankind extends to him a helping hand, a confidence begotten through the knowledge that universally mankind sympathizes with him and is only too happy to give him succor and aid. These features which have been so common in connection with the deaf or near deaf have been almost entirely absent, or have been eradicated, in connection with our treatment.

Another condition is the modification of the voice, which is attendant on the terrible face injuries produced in modern warfare. It is a singular trait of mankind that he avoids the deaf, and derides the individual who presents difficulty of speech production. These poor individuals are not only subjected to the humiliation on account of their imperfect vocalization, but are subject to the curious observation and scrutiny on account of their facial defects.

It will be the province of the Section of Defects of Hearing and Speech to remove these mental attitudes, first through re-education and corrective work with patients, and second, through correction of the misapprehension of the layman. At the present time, we have a staff of skilled medical officers in connection with the Otolaryngological Section, Division of Surgery of the Head of General Hospital No. 11, coördinating with us in this work. We have also the medico-pedagogic staff in connection with and under the control of the medical officers. We have at the present time twenty-eight patients, an increase of eleven since our work first started. There is no doubt but that we will soon have a large number of patients in this work. We expect the turnover to occur about every three months. Some of these patients will go into limited service, but most of them will be discharged into the hands of the Federal Board for Vocational Education or into their former life.

It would be interesting to tell of some of the marked improvements that these young active intellects have made in connection with their therapeutic work, but we cannot without being invidious show the activities of one as excelling the activities of another. Sufficient it is to say that they have all been enthusiastic, they have vied with each other in their efforts and are all extremely anxious to get well, and make every effort along all lines to accomplish this as rapidly as possible.

INDUSTRIAL TRAINING FOR THE WOUNDED

BY FRANCIS D. PATTERSON, M.D.

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To the unfortunates of war, our industries owe a responsibility which cannot be met merely by the payment of compensation in the form of a government pension. We are face to face with a problem and responsibility which cannot be shirked, because we cannot abate it by relying upon immigration to make up the deficiency in man power, for immigration has ceased, and probably will not be permitted by alien and allied governments within our lifetime; neither can the solution be found by the unlimited employment of women, for while it is undoubtedly true that women can and are replacing men in some positions, by reasons of their sex there are limitations upon the work that they can do. It needs no words of mine to emphasize the importance of the conservation of the health of those who are to be the mothers of our future race.

THE PROBLEM

The number that we shall have to reconstruct and rehabilitate will depend entirely upon the length of the war and the size of the armed forces in the service of our government. From the experience of the last four years we can at least get an indication as to what awaits us. It has been estimated by the Federal Board for Vocational Education that there are at the present approximately 13,000,000 wounded and crippled soldiers in the belligerent countries of Europe, and of this, 3,000,000 are caused by amputation. In Germany alone it is reported that 500,000 men are under treatment in hospitals, and during 1916 there were 16,000 amputations of the leg. Exclusive of those who died, experience in the past would seem to indicate that 10 per cent of the fighting force will be incapacitated either by wounds or disease, or 100,000 men out of every million men engaged. Of this 100,000 men, 80 per cent can be returned as members of the fighting unit, and the balance, or 20,000

men, will of necessity require vocational re-education to overcome the handicap of either wounds or disease.

From the English experience we can at least get an indication as to what awaits us. We are told that of every 1,000 men returned as unfit for further service, 453 are rendered so by injuries, and 547 by diseases. Thirty-two in the thousand have wholly or partially lost their sight, 49 have lost an arm or leg, 264 have had serious injuries to these limbs, or to the hand, about 50 have been injured in the head, and about 60 have suffered miscellaneous hurts. Of the diseased, the largest total, 124, is accounted for by ailments of the chest, about half being tubercular; the second largest, 110, by diseases of the heart; the third, 67, by what may be called nervous troubles, of which eleven are cases of epilepsy and nine of insanity.

THE NEED FOR VOCATIONAL TRAINING

(a) *Ensuring of Self-Support.* No self-supporting man who had the misfortune to become either wounded or diseased in the service of his country can subsist upon the government bounty in the form of a pension. Therefore it is essential that he be given such vocational training as will enable him to take his place as a self-supporting and self-respecting member of the community. It is unfortunate that adequate vocational training is not required of all the people in our land before they are permitted of their own volition to select an occupation. It needs no words of mine to emphasize the number of square pegs that are now rattling in the round holes of our present modern industrial structure.

(b) *To Ensure Early Return to an Occupation.* Experience has clearly demonstrated that occupation should be procured for those injured or diseased at the earliest possible moment so as to counteract the tendency to lose interest in a desire for work that so often comes to those who spend a long period of time in a hospital. It is therefore essential that this vocational training should be commenced during the period of convalescence, and that no stone be left unturned to stimulate the interest of the man in his training in his future vocation.

(c) *The Increasing of our Supply of Labor.* It needs no words to emphasize the need upon the part of industry for those cripples who will come to it with the benefit of adequate vocational training: a place in our industrial structure awaits them.

THE ANSWER TO THE PROBLEM

(a) *The National Program.* The Smith-Sears Vocational Rehabilitation Act, Senate Bill 4557, Second Session, 65th Congress, was approved by the President, June 27, 1918. This bill provides for the vocational rehabilitation and return to civilian employment of disabled persons from the military service, and centralizes the vocational rehabilitation under the Federal Board for Vocational Education, which is, of course, the only rational solution of the problem. This problem is of nation-wide significance, and therefore should be handled by the federal government coöperating with all other agencies.

(b) *The Selection of the Occupation.* The man should be encouraged to select the occupation himself, rather than that some one else should try to guide him into an occupation over the choice of which he has no volition. In choosing this new occupation, it should as far as possible be closely related to work previously performed so that full advantage may be taken of experience and previous training. Care should be taken to encourage the man to choose a standard trade in which there are many and full-time openings, rather than to choose an occupation in which there are only a few workers, or one which is seasonable.

(c) *Place of Training.* The training should, wherever possible, be given close to the home residence of the man, so that he may have the advantage, after his military service, of again being associated with his family and his friends. Too much emphasis cannot be laid upon the importance of the thoroughness of the training so that the man who is only partially trained will not labor at a disadvantage with his fellow workers.

(d) *Securing of Employment.* It is essential that all agencies should coöperate and secure the prompt return to employment of the cripple.

A STORY OF REHABILITATION BY A CRIPPLE WHO IS NOT A CRIPPLE

BY MICHAEL J. DOWLING,

President Olivia State Bank, Olivia, Minnesota.

I think the chronology of this exhibit started February 17, 1866. He was frozen in a blizzard in Minnesota, December 4, 1880, which was known in Minnesota and throughout the west as the great snow winter. The next important event occurred on the second of October, 1895, when he married a very beautiful girl. He had no difficulty in courting her—and was not the only one. The next event of any great importance is yet to come. It is the writing of the epitaph.

I was fourteen years old, almost fifteen, when I was lost in the blizzard in Minnesota, and up to that time there had not been much in life—since that time there has been a great deal. As a boy and before being overtaken by the blizzard in southwestern Minnesota, I had been making my own way from the time I was ten years old, that is since my mother died. Among other things which I did in preparation for this experiment of reconstruction was to fill the positions of cookee in a lumber camp in Wisconsin, cookee on several Mississippi steamboats plying between St. Paul and St. Louis, water carrier on the Dalrymple Wheat Farm, Cottage Grove, Minnesota, and for a time a kid cowboy on a large ranch, known as Lord White House Ranch in Wyoming, where I learned to shoot, and ride any horse that had four legs. I am willing to put up a wager that there is not a horse on the ranch that I cannot ride today.

The blizzard can best be understood by you—if you have not been in one—by looking up a recent number of the *Saturday Evening Post*, in which the author of "Keeping up with Lizzie" describes "The Making of Mike," having reference to me. It is the best description of a blizzard that I have ever read.

The blizzard I faced on December 4, 1880, caused the thermometer to register 50° below, and I was out from about seven in the evening until sunrise the next morning. The sun did come up the next morning, and so did I—out of a bed in a straw-pile—and

on getting up and trying to get to a farmhouse, I found that I could not bend my knees and I could not open my hands. The hands were frozen clinched and were like two chunks of clay, but after awhile I limbered up a little, in order to get on my feet and make for the house. I aroused the people. It was rather early even for farmers to get up. The good lady of the house filled a tub with cold water and some other vessels with cold water, and I put both arms up to the elbows and both legs up to the knees into this cold water, and then with this thawing-out process came a splendid opportunity to display courage. It is not a very pleasant occupation, watching the frost freeze the water around your hands and legs and form an ice coating all around as the frost comes out. However, the surgical operation was not performed until several days afterwards—some sixteen days—and the line of demarcation appeared very plainly just above the ankle joints and just about at the wrists of the hands. The operation was performed by the doctors present, on a kitchen table covered with oilcloth in a little family home in the village of Canby. If ever any germs had an opportunity on anyone they had it on me,—but I just grew fat on them. Nothing occurred except healing. Doctor Keen describes (page 16) the testing out of the ligatures to see whether they were ready to be pulled or not—that was the very method the physicians used to find out whether the ligatures were ready to be pulled in my stumps at that time. There were three doctors performing the operation, but in spite of having more than one operating on me I still succeeded in living.

Since that freezing, as I have said before, life has been worth living, and to me it has been a splendid joy—not only in courting the girls and marrying one of them and having a son and three daughters; we have lost the son, but the three daughters are still alive to grace the household. One of them is a sophomore in college, one is a junior in high school and the other is in the seventh grade. I am happy to say that when a man has his legs frozen off—and I believe it is also true when they are shot off—he does not pass on to the next generation the same condition; in fact, I am the only one in our family who has been compelled to buy artificial legs. The girls all take after their mother—they are good looking. We are a happy household. I do not believe that there is ever a thought that enters the mind of the mother or of the girls as to dad being subject to any misfortune or affliction. They think he is just about

the happiest old dad they know of. And he is about the busiest one that I know of—he has to be with as many women folk around the house as he has.

About enjoying life—I think I have enjoyed every moment since the time the doctors got through with me, although there were a few days when I felt really stunned. I was a very active young man, pugnacious, full of fight, and I found myself suddenly with most of the fight cut off—at least, that part which I used to fight with successfully was not in very good shape—so I transferred my thoughts from those things that were gone to what was left.

It occurred to me without any reconstruction campaign on the part of our state university or other place of learning, that there was just one thing for me to do if I did not have any legs or arms, and that was to polish up the machinery above the neck. So I became an omnivorous reader, and—while I may be hurting the feelings of some people somewhere—I must confess I was also a carnivorous eater. I ate heartily, read ravenously, and got as much learning as I possibly could without the aid of teachers. I went to school just as much as I possibly could under the circumstances. You must know that when I was frozen in Minnesota I had neither mother, brother nor sister to look after me or help me. I was the only child in the family. Mother died when I was ten, and father had all he could do to take care of himself, as he was just an ordinary carpenter.

I possessed, at the end of the season of 1880, five head of young cattle and a very intelligent pony with handwriting on his hips. The pony was the last to go. The five head of cattle were sold at once, since I intended to pay my way just as far as I could. The money received from the sale of the five head of cattle, with the little money I had saved up from the season's work, went into buying the necessary medicines. The good people of the town furnished the bandages from worn pillow-slips and sheets and wearing apparel that the ladies tore into strips and wound into rolls. The old lady who was the leader in that work still lives in Canby, and her name is Mrs. Dodge, but she did not "dodge" any work when it came to helping me out. She was there all the time and had a corps of assistants. Therefore, you will understand that I was not very wealthy and not in a position to buy any luxuries, and with that in view I tried to go just as far as I could with the money I

received from the sale of these few head of young stock; but the springtime found me compelled to sell the dearest thing I had on earth—the pony. I cried all night at the time I sold that pony, and I still think of him with tears in my eyes. He was so intelligent and I thought so much of him, but he had to go, and when he had gone the demand still came for more money. I had none—and there is just one thing that happens to a boy or anybody else when that day comes, and that is, the local community assumes the burden. In this case it was the county. The county of Yellow Medicine, Minnesota, had to step in and furnish the money necessary to have me reconstructed and rehabilitated.

The Board of County Commissioners at that time consisted of three men—we now have five. There were two old Norwegians on that board. One of them was an old sailor and the other was an old farmer. Neither one of them had very much book-learning, but both of them had hearts so big their tunics could hardly hold them. The other member and chairman of the board was a Yankee bred in the purple in Maine; he was, in Maine, before going West, at the head of a seminary, and was a man of splendid educational attainments. When the question came up, "What will we do with Mike," this gentleman of excellent intellectual attainments said that he had partially made arrangements with a farmer who had a good home and would take care of him for the rest of his life for two dollars per week. Mike was standing nearby on his knees, with pads made so that he could walk on the floor without hurting his knees—and it was all he could do to contain himself from jumping into the air and landing on top of that professor—but one of the old Norwegian members of the board, Mr. Ole J. Daley, who is still alive and hearty and with whom I had the pleasure of visiting this year, said, "Well, don't let us be in a hurry about this. Mike, what do you think about it?" Well, I smiled—used all the magnetism I possessed—looked into Ole's face and said, "Mr. Daley, if you will give me one year at Carleton College it will never cost this county another cent as long as I live to keep me going." "Well, but," he said, "you can't back that up; that is just your say so." "Well," I said, "I mean it."

The chairman of the board—I do not care to mention his name because he has some sons and daughters who are very good friends of mine and very fine people, and I think it was simply a slip of

judgment at that particular time that caused him to take the position that he did—at any rate, the chairman thought it might be well to think it over until the next day. I got busy—and that is the reason why I got into politics later on—and went to the county auditor, and said, "Henry, you get busy on those two Norwegian members of the board. You are a Norwegian yourself—now you stay by me." "All right," he said, "I'll take them home with me tonight and keep them, and I'll talk to them all night if you want me to." Well, he did good service, at any rate, no matter how he worked it. The next morning the vote stood two to send me to college for one year, and one to send me out on the farm at a cost of two dollars per week for the rest of my life. Well, I went to Carleton and spent the year there. I did not loaf any, I can assure you. I did not have any money to spend on midnight suppers or oyster stews, or anything of that nature, like many of the boys had.

E. J. Weiser, now president of the First National Bank of Fargo, North Dakota, was one of the boys who roomed in the same house I did. He had so much money that I explained to him that I happened to know of a place he could get rid of some of it. He took the hint, and I joined him occasionally at some oyster suppers and other things which I could not afford to buy. I got some second-hand clothes from somewhere—I do not know where they came from—while I was at Carleton, and I had an opportunity offered me to come east and attend a certain school here and become a theological student, but I could not do that, simply because I was asked to make a statement that I would become a minister of the gospel if I would get this particular advantage in the east, and I said that I would be glad to get the education, but I could not accept anybody's money on false pretenses.

I taught school after getting out of Carleton, painted fences, ran a roller-skating rink, sold books by subscription, sold maps—and, in fact, I did everything and anything that would bring in an honest dollar—and I was not ashamed to be seen doing the painting by the roadside and have the rest of the boys go by and say, "You are putting more paint on your clothes than you are on the fence." This painting job was naturally hard work, but it was lots of fun teaching. I enjoyed teaching very much. I taught for seven years—three years in the country, when I was promoted to a graded school, and the last three years I was superintendent of a high school,

the first high school in Renville County, and that is the county in which I now live. I also started a paper, ran a weekly paper a number of years while teaching school, and did a number of other things. Besides running a paper and teaching school, among other things I did was to get into politics. I stirred up one of the large financial institutions of our state to such an extent that it became one of the greatest failures in the history of the northwest. I made charges against it through the columns of my small country paper, verified same by examining their books at their own request, and then published the verification. That got me into politics. I was made assistant to the chief clerk of the House of Representatives the first session, and the next time I was chief clerk of the House of Representatives, and liking the work so well and thinking that I ought to have the vote next time, I became a candidate for member of the House, and was elected by a comfortable majority. I was also elected Speaker of the House, it being the first time that a new member had occupied that position, and also against the wishes of the combinations that usually controlled. There happened to be in that House enough new members in the state to make a comfortable majority, and all I did was to go to these men or write to them and say to them, "We have a majority and what is the use of letting the old fellows run the House?"

To marry is to take on trouble sometimes, but in my case I want to "fess up" that with the exception of some suffragette work that Mrs. Dowling does, we have gotten along very nicely. We have lived very happily, and she never thinks of the artificial legs any more than I do. In fact, I think—if I may be pardoned from getting away from this personal talk just a moment—the trouble with most crippled men is that they think about those things that are gone and cannot be brought back. They keep their minds on what is gone, instead of diverting their minds to what they have left and making an effort to develop what there is left.

I say I get a great deal of pleasure out of life—in one way, by driving an automobile. My family for years have toured the country in our own car and I have been the driver. I have driven to Yellowstone Park, over the famous Yellowstone Trail, and back along the great Northern Railroad. We were gone seven weeks on that trip, and when we got back I weighed more than I did when we started—but had considerable less money. Two

years ago this last summer we drove to Duluth in our car. I believe in taking the girls and my wife every place I go if I can do it conveniently, especially when going for pleasure. We drove to Duluth and shipped the car to Buffalo via the Lakes, and then drove from Buffalo through New York State to western Massachusetts, to my old home. I was born in the Berkshire Hills of poor but Irish parents. I drove this car through the Berkshire Hills down to Boston, then to Plymouth, and from Plymouth we went back to Boston, followed the ride of Paul Revere and visited the beaches along the coast to Portland, thence from Portland to Poland Springs and from Poland Springs—after filling up with that splendid water—we went over to Bartlett, New Hampshire, on the ideal tour route, and through the Green Mountains and White Mountains back by a different road to Buffalo. After visiting Niagara Falls, we re-shipped from Buffalo to Duluth and took in the Iron Mines and the new Steel City, reaching home after weeks of enjoyment, with the girls learning more than they had learned in the year that they had spent in school and coming back filled with energy. The youngest is ten and the oldest is nineteen years old, and I will put them up against any boy of their size for a scrap. They are perfect specimens of womanhood and able to hold their own in any position.

I believe if I say nothing else in this article than that education is made too easy in most cases for boys and girls, I will have said a great deal. The teacher takes on all the work and makes a nervous wreck of herself, rather than put obstacles in the way of boys and girls in order to develop that boy and girl. Most boys and girls go to school much earlier than they should. My girls did not go to school until they were eight years of age, and the oldest one became the valedictorian of her class in high school and finished a year ahead of those who had started much earlier than she had.

Now, for a suggestion in this work—if you do not watch out you are going to do so many things for the crippled soldier that when he gets back home he will not feel the need of exercising his own muscles or his own faculties. You must put him in a position where he has to do the work. I know it is good for a man in that condition, because I have gone through the mill. There was no one to help me in any way, shape or form; and while I have said that a man is worth \$100,000 a year—if he can make it honestly—above

his neck, and, perhaps, may not be worth over \$1.50 per week below, I have not been able to earn that much money in a year, I must confess, but I am looking forward to reaching that point before I pass on; and in the meantime when anybody tells you that because a man loses a leg or two of them or an arm or both of them he is a cripple, just refer him to me and I will take care of him. The finest looking men in the world may have more cause to regret things that they have done and they may not enjoy life as much as the man who is despised as a cripple, because he has lost a leg or an arm. There is no such thing as a cripple, if the mind is right.

THE SUPREMACY OF THE SPIRIT

By HOWARD R. HEYDON,

Chief, Department of Public Education, Red Cross Institute for Crippled and Disabled Men.

The problem of the physically handicapped is one of the spirit. There is probably no matter developing out of the war that will have a greater bearing on the future than the new conception of social justice due the person who is not able-bodied. Heretofore he has been looked upon with more or less toleration as a nuisance to be gotten out of the way as hurriedly as possible. He was condoned at home and shunned abroad.

In the country the boy who lost a foot in the mowing machine could not stay around the house indefinitely because of economic necessity. He had to go to town and be fitted with an artificial leg. If he were then unable to continue to do his work on the farm he had to learn some trade at which he could earn a living.

There has been more spirit developed under such circumstances among those in the country than in the city. Where there is a small population there is a more general knowledge of actual personal conditions and a corresponding tendency to improve them. This is not true in a city where people can live next door to each other for years as total strangers.

Up to 1911 in this country when the first financial liability was placed by law upon the employer, there had never been any general recognition of a social obligation to the injured. If the person had sufficient perseverance or intelligence or both to overcome the physical handicap, he succeeded, while on the other hand if he lacked those qualities, he failed. There is no half way average. Those who are not able-bodied must more than compete with the normal in spite of the unequal conditions, or sink to the level of dependency.

But now this is being changed. The man will still have to make the fight himself to surmount his difficulties, but through the experience of foreign countries and our own awakening to the facts, our common sense cries out that every disabled person must be given the training necessary for placement in a position that will be of a grade higher, if possible, than the one he formerly held.

The veteran is going to return with the honor chevron conspicuous on his right sleeve. He is going to be proud of his injury as a symbol of his service to his country. He is going to point to his artificial leg or other disfigurement as a reason why he should receive a new classification in the eyes of the public. Yet within a year or so when the glamor of narrative has worn off his recollections of the war, there will be no distinguishing mark to differentiate him from any other man with similar disabilities. It is for that time that we must prepare.

The problem of the physically handicapped falls quite naturally under two headings: the one relating to the individuals affected during the entire period of their treatment, training, placement and follow up; and the other to the attitude of the general public towards them.

The medical-surgical aspects have been given careful study in the past in spite of a scientific recognition grudgingly acknowledged. Orthopedic surgery has been wonderfully developed and has contributed to the restoration to active life of many persons who would otherwise have been sentenced to hopeless idleness. As a criterion of its importance during the present war it has been estimated that in Great Britain, at the end of the first year of fighting, from 30 per cent to 40 per cent of the casualties required orthopedic treatment "either in the way of preventing deformities or in doing actual corrective surgery or in the reconstruction and educational work."

The restoration of function through orthopedic surgery and various therapeutic measures is tangible and of a nature concrete. It is a reality. A patient can realize its curative and permanent value and assist in making it successful through his own efforts. During the period when most of this attention is being given, the patient is encouraged to occupy his time and mind with the beneficial exercises and work. In this it would seem that there should be little if any obstacle in securing the most willing coöperation, particularly in military hospitals where the sense of obedience is still dominant. Yet it is right here where the abstract influences have had to be taken most into consideration.

Frequently there exists a lack of interest on the part of the patient that seriously menaces his complete recovery. A man who has gone through terrible experiences and who has lived abnormally

for a considerable period of time may have lost some of the enthusiasm of independent life. Indeed it is marvelous that, knowing their military usefulness has been spent, they still can summon sufficient courage to fight their way back to health. Many of them undoubtedly would not be able to do so, were it not for the incentive given by the intelligent administering of those tireless hospital workers who contribute their own strength in awakening in the patient the desire to get back again into the work of the world.

According to the modern practice in disability cases, the mental attitude of patients is determined as soon as possible with the idea of alleviating any causes of worry or misunderstanding that would have a tendency to retard their medical progress. To a great extent this contact early established with the patients is in the nature of "cheer up work" which, however, soon develops into a more purposeful character. In England, Sir Robert Jones tells us:

The frequent revisions of pensions led to a stubborn resistance to treatment. Under gentle methods of persuasion, however, by both hospital staff and cured comrades, the men began to evidence a new attitude. They often did not want to get better lest it meant their worldly impoverishment, but the inspiration of mental repose and the tonic action provided in the curative workshops, proved to be vigorous stimulants for physical betterment.

At first many of the wounded in the American forces will also harbor the thought that they will never again be of any use and will recall the pencil venders and mendicants on the street corners at home. But under the careful guidance of their attendants, these fears will be gradually turned into a vision of self-support at occupations for which they will be specially trained. This change cannot be brought about in a day. It may often take months to overcome all the morbid apprehensions, but once the patients begin to take an active interest in their daily improvement it is only a matter of time before their fighting spirit will again show itself.

Nature either kills or cures. In the animal world the injured one is left to die or recover by his own efforts and while civilization has developed love, sympathy and healing qualities in the human, the animal instinct of self-preservation is still strong when finally aroused. When the disabled person leaves the hospital, however, no one can foretell what his mental outlook will be. He has been spurred on by the constructive inspiration in the hospital, yet now he looks out on a future of great uncertainty and doubt. He knows

that as a nation we have heretofore been content to accept the physically handicapped in the nature of a liability and have patronized them and given them alms, but have never sensed any fraternity towards them. He pictures, perhaps, among his acquaintances some man with injuries similar to his own who is earning a mere pittance for his work and he is not apt to be very enthusiastic over his opportunities. Then he learns that the government will restore him to a condition of self-support.

Upon the entry of the United States into the war, Congress was confronted with the necessity of enacting a pension law and wisely adopted the expedient of basing remuneration on two sets of schedules, the one designating the amount payable in case of a specific injury along lines similar to workmen's compensation measures and the other providing the variable amount according to the number of dependents.

While this was a distinct advance over any pension system which had hitherto been established, Congress was urged in vain, in the light of experience of foreign countries, to include provision for re-education. The American Red Cross, therefore, opened an experimental institution in New York City to demonstrate its practicability. The work was begun under two main divisions which might be designated as concrete and abstract. The concrete work consists of six training courses, an employment bureau and a department of industrial surveys. The training courses were selected to meet the requirements of those civilians who had arm or leg injuries. The employment bureau was started to find positions not only for the pupils taking the courses but also for other civilians physically handicapped who applied to the Red Cross for assistance in securing occupation.

It was found that manufacturers did not realize that there were any positions in their plants that were suitable for disabled persons to fill. In fact many were quite insistent that no one but an able-bodied person could do the work that was required. Industrial surveys were therefore undertaken in and about New York City to determine the operations in each industry that were available for disabled persons and found over 1,400 jobs. Under the stress of actual labor shortage many employers were quick to see the practical and economic advantages and extended every facility at their command.

In fact one corporation was so impressed with the possibilities of utilizing the men injured in its plants that it opened a department of re-education of its own. Another authorized its employment manager to train an armless man to become the "eyes" of the superintendent, while the board of directors of a third adopted the following resolution:

It shall be the business policy of this corporation, to regard all applicants for employment according to their actual capabilities, to be determined after a fair chance, and no person shall be discriminated against because of any manner of physical handicap or disability, providing that person can perform the allotted work in a satisfactory manner, in competition with others doing similar work for this corporation.

No matter how capable a person might be his utility is measured by his opportunity to demonstrate his usefulness. This truism is readily appreciated in respect to the able-bodied and is all the more significant in the case of those who have physical limitations. The greater work undertaken by the American Red Cross therefore is in the abstract field of research and public education.

Foreign experience indicated the difficulty in bringing about a general realization of the seriousness of the problem and accordingly a general educational movement has been undertaken to create an enlightened public opinion towards the physically handicapped, so that they will be regarded from the standpoint of their capabilities rather than their disabilities. This is undoubtedly the most important phase of the whole question. The disabled person has been encouraged to make light of his misfortune. He has acquired the proper spirit to work out his salvation and needs only the reassurance of home influences to spur him on to accomplish it.

What will be the attitude of those influences? Will there be the inclination to keep the injured person at home and support him in idleness? There will naturally be the temptation to do that. Also there will be a tendency for every one to wait upon him in every way possible. In the past the common practice has been to lavish such sympathy and charity on him that his very character has been demoralized by the intended but misdirected kindness. People have assumed him to be helpless and have only too often persuaded him to become so.

Every one has been guilty of giving alms to the person who sells shoestrings and in so doing has been actually hiring him to remain

on the corner. That is rather a brusque way of speaking of it but it is a fact. By contributing to his support the passerby has added to this degradation. Occasionally there has been a reform movement of some kind and an effort made to drive the beggar from the street, but it has always failed because there was no constructive end in view. Where could the disabled person go? What could he do? Besides, the police were unsympathetic. They have their superstitions or sentiment or whatever it may be called, about the number of dependents stationed on their beat. It is good luck to have a familiar landmark that the officer can look for as he turns the corner. Naturally the police felt that the beggar, who never had harmed any one, was just being persecuted. The new method of approach is to educate the policeman to the satisfaction of being self-respecting and self-supporting and let him be the social agent to show the beggar how little the disability really matters to the person who has the will to surmount it.

The problem of the physically handicapped is one of the spirit. Perhaps an incident that occurred the other day will best illustrate this fact and incidentally show how difficult it is to visualize a bodily ailment that is not obvious. In a certain office I met a man forty years old who stood six feet two and was straight as an arrow. A moment later his father aged sixty-five came swinging in on his hands. His legs had been amputated at the hips. After being introduced to the lowly man who shook hands with me cordially, he said: "My son has been telling me of the work that you are interested in and since you know so much about it which of us is disabled—myself with no legs or this six-foot son of mine?" I told him that I could not answer that question until I knew their respective capabilities. Then he explained that he was in excellent condition except for the loss of his legs, which he did not need in the practice of law, while the younger man in spite of his marvelous physique had a hidden spinal injury which prevented him from bending at the waist more than an angle of 15 degrees. For this reason the son had to be very gradual in his movements through the danger of physical collapse. Yet despite this handicap he too was a successful attorney.

The public must not judge the physically handicapped by the eye alone. There are often circumstances to be taken into consideration which are not manifest. Among the victims of industry there are many whose injuries do not show on the surface, while only a small

percentage of those returning from the front have visible wounds. Statistics recently compiled in England by the Ministry of Pensions, show that less than 10 per cent of the total casualties of the British troops are obvious disabilities. The new sense of public responsibility towards the handicapped must not be sight, but understanding.

How few think of all the thinking few
And many never think who think they do.

This fittingly describes our previous condition of public apathy towards the physically handicapped. It is not willful nor malicious but thoughtless and prejudiced.

The average person does not know that one who is disabled can be taught to do anything worth while. In fact until the results of reclaiming those maimed in the war were recently brought to his attention, he never had given the matter a thought. But his interest has now been aroused in the men wounded abroad and he reads with genuine happiness that the government has engaged to rehabilitate them. He wants to help and actually offers his services only to learn that in dealing with the disabled soldiers the proper place for all individual assistance is solely through the regular channels provided by the federal authorities. Then gradually our average person comes to appreciate the larger problem involved. He enumerates the handicapped people that he knows personally and feels a shock of satisfaction to find that they are all of superior intellect successfully competing with the able-bodied. This revelation inspires him. He is thrilled with a new incentive. The old proverb rings in his ears, "Where there's a will there's a way," and he realizes that his duty is to contribute the moral support and encouragement to all persons who have sacrificed their bodily well-being in the instrumentalities of civilization.

Can the physically handicapped count upon you also to recognize the supremacy of the spirit?

PHILADELPHIA SCHOOL FOR OCCUPATIONAL THERAPY

BY MARGARET A. NEALL,
Corresponding Secretary.

The Philadelphia School for Occupational Therapy was organized in the spring of 1918, under the auspices of the Central Branch of the National League for Woman's Service. During the preceding winter many applications had been received at the Arts and Crafts Guild of Philadelphia for classes in handicrafts such as were needed by aides in reconstruction work. These continued applications made the need for a Philadelphia School of Occupational Therapy apparent, and at a meeting of the Executive Committee of the Guild, it was resolved to write to Teachers College, New York, for a program of the work done there, and to make a list of required crafts with volunteer teachers from the guild offering their services and the use of their studios to the students of reconstruction work. This offer was formally made to the Central Branch of the National League for Woman's Service, and enthusiastically welcomed by its chairman, Mrs. H. Gordon McCouch, and by her presented to Mrs. Edgar H. Baird, state chairman of the league, and Mrs. A. H. Reeve, state chairman of reconstruction work. Under its supervision, preliminary investigations were made as to what if anything was being done along these lines in Philadelphia, the policy of the league being to avoid duplication of effort and secure coöperation whenever possible.

Occupational training must not be confused with vocational training through which the disabled men are restored to a wage-earning plane. Though both occupational training and vocational training deal with re-education, and though they will inevitably overlap somewhat in their application, occupational training is essentially a form of medical treatment administered under direction of physician or surgeon, while the other is a form of technical training selected by the man himself, under the advice of workshop instructors, with a view to financial returns.

A canvas of the arts schools and institutions discovered a condition of readiness to work, but mystification as to what direction

their efforts should take. The School of Industrial Art, the Philadelphia School of Design for Women, the Graphic Sketch Club, the Plastic Club, all whole-heartedly and enthusiastically endorsed the suggestion of the Arts and Crafts Guild and of Mrs. F. W. Rockwell, as amplified and developed by the Central Branch of the National League, and by their generous and valuable coöperation made the scheme of a Philadelphia School of Occupational Therapy possible. The Philadelphia physicians no less than the arts institutions were most helpful, encouraging from the beginning and unselfishly giving their time and energies towards putting the proposition on a practical basis.

The school opened on October 2. As the applicants are coming in daily, no accurate figures can be given of the number entered for the first term. Within a short period after the announcement of the school had been made in the newspapers, nearly two hundred requests had been received for circulars and application blanks and it is felt that the original limit of a class of forty-two may have to be extended. All applicants must be at least twenty-three years of age, either native or allied born, and possessed of suitable personality. The directors reserve the right to refuse admission to any applicant, and to grant admission only upon probation. The course, as nearly as it can be outlined in advance, owing to reasons given later on, is as follows:

THE COURSE

THE THEORY AND PRACTICE OF OCCUPATIONAL THERAPY

Lectures on psychology and the method of teaching disabled and invalid pupils; hospital conduct and personal hygiene.

Hospital Practice: Extensive practice in several Philadelphia hospitals, under conditions similar to those of the military hospitals, to give experience and self-confidence to the prospective aides.

Hours: Hours will be from 9 to 12 a. m. and 1 to 4 p. m. for five days, and until 12 m. on Saturdays.

Certificates: Certificates of Graduation will be issued to all students successfully completing the course. Graduates will also receive confidential letters of recommendation.

DESIGN AND CRAFTSMANSHIP

Applied Design to include the principles of design and the theory of color as applied to the subjects taught in this course.

Weaving to include hand looms, bead looms and simple rug and mat making, etc.

Basketry to include reed work, etc.

Block Printing applied to both paper and textiles.

Woodwork: whittling and carving.

Pottery: modeling.

Knitting, crocheting, needlework, rack knitting and beadwork.

Metal Work in its simplest forms.

Bookbinding: Simple book construction, such as portfolios, boxes, etc.

This Course includes Occupational Therapy as applied to the Deaf, Blind and Tuberculous.

As arrangements now stand, the classes in craft work will be divided between the School of Industrial Art, Broad and Pine streets, and the Philadelphia School of Design for Women, Broad and Master Streets. Both institutions have offered not only the use of their plants, equipment and floor space, but also the services of their teaching staff.

The interest and enterprise of the physicians have opened the wards of well-known hospitals to the aides for practice, and lectures on educational psychology, hospital routine, hygiene and sanitation, as applied to reconstruction work, will be given as the course proceeds. Owing to the need which the government has discovered for a wider field of knowledge for the aides, the course has been extended to eight months, with a provision that those already partially prepared, such as teachers and college graduates, along kindred lines, may complete it within a shorter period, the idea being to make it as intensive as possible.

In response to the government's notice of August 8—requiring expert knowledge along one or more of the following lines: Social worker; library service; teacher of adolescents or adults in industrial and fine arts, general science, English, commercial branches, free-hand drawing and design, mechanical drawing, telegraphy and signalling, French, manual training, agriculture (gardening and floriculture), music plays and games, mathematics (commercial and industrial)—the educational committee has offered all necessary facilities to the aides for these branches, and Mr. Gummere of the Penn Charter School has given his valued coöperation. In addition, facilities are given to the aides for practice in teaching the blind at the Overbrook Institution; lip reading experts will supervise the special training needed for the teaching of the deaf; and special training will be given for the tuberculous.

Mr. Fleisher of the Graphic Sketch Club has offered those prem-

ises for the use of the aides, and the School of Industrial Arts has given them a club room where it is hoped, in spite of scattered classes, to foster the school spirit which is such an important factor in maintaining high standards for work.

Mrs. H. Gordon McCouch, chairman of the Central Branch of the National League for Woman's Service, is chairman of the board of directors of the school, the members of which serve on the various special committees which are purposely kept as small as possible in order to accomplish the maximum amount of work with the minimum waste of time. The directors of the school are anxious to make the aides as valuable as possible to the government, and to do this the curriculum is kept more or less elastic in order that new courses may be added or unnecessary ones eliminated as the Surgeon General's experience may dictate. At the suggestion of the government the program tentatively made out last spring has already been twice enlarged, and the committee on curriculum is looking forward to further modifications or extensions as the course advances and new requirements are discovered.

While this school cannot guarantee positions to its students, the fact that the government is already sending out an urgent appeal for aides in military hospitals in this country and the fact that General Pershing has called for one thousand aides for service abroad, seem to give fair assurance that a valuable aide will find an immediate call for her services. The tuition fee for the course is the nominal one of fifty dollars, and it is hoped that several scholarships will make it possible for any one having the requisite qualifications, to attend the school.

RETURNING THE DISABLED SOLDIER TO ECONOMIC INDEPENDENCE

BY DOUGLAS C. MCMURTRIE,

Director, Red Cross Institute for Crippled and Disabled Men

It is surprising how very recent has been the development of the work of rehabilitating the disabled man. Up to ten years ago absolutely nothing had been done in that direction, and while the cripple received monetary compensation of one kind or another in the past, nothing was done to put him back on his own feet or to deal with him in a constructive manner. The only obligation acknowledged to the disabled soldier in the past has been the payment of a pension—which has not always been a help to the man in the long run. It has been a necessary provision, of course, but it did not go far enough. It was never enough to support a man, on the assumption that he was totally disabled, and has acted more or less as a subsidy which has not proven an encouragement for him to go out and earn his own living. We have dealt practically in the same way with disabled industrial workers. We have, even under the most enlightened legislation, compensated him for his disability in the form of a money pension and left him idle and without any means of getting back to usefulness. This is also, I am glad to say, in the process of change.

The first school for the disabled adult was established in 1908 in Belgium, at Charleroi, and was practically the only school in existence up to the opening of the present war. During the first couple of weeks of hostilities that school was swept out of existence by the German invasion. The next move was made in Lyons, France, in December, 1914. That institution was the fore-runner of all the other schools, of which there are now over one hundred in France alone. The work has been taken up by practically every other nation, it being realized that the only real compensation to the disabled man is to put him back again where he can be useful, where he can be productive, and in a position where he can be happy and contented.

Now when we talk about rehabilitating the disabled soldier,

when we talk about taking a man who has lost an arm or a leg, or who has lost two legs, and sending him out to earn his own living again so that he will be able to earn as much as he did before, it does not sound plausible. The usual reaction will be: "That's all very well to talk about but can it be done?" I think I can demonstrate the logic of it by a couple of simple examples. Let us suppose that a man comes back from the front with both legs off. That is a serious handicap and he would ordinarily be classified under any pension scale as totally disabled, laid aside forever. Presume, however, that we take that man and teach him linotype operating, a job at which he will be seated all day long and which requires the use of only the head and the hands. Can that man turn out as good a day's work as the able-bodied worker next to him? There is absolutely no reason why he cannot. Let us presume that we have a man with only one arm, and that again is a serious handicap, because the arm cases are infinitely more difficult, generally speaking, than the leg cases, particularly in the case of manual workers. Let us suppose that we put that man in a furniture factory at a job as striper, that is, a man who takes the chairs after they have been painted and puts the stripes down the legs, or wherever the design calls for them. If you take a man with two hands and put him at that job he would probably keep one hand in his pocket because he will not have to use it. Is a man with one arm at all handicapped when placed at work of that character?

I was struck the other day when reading a document describing the work for the blind at one of the centers in Europe to learn that they had found successful employment for the blind in a clock factory at the job of testing out the gongs—spiral pieces of tempered wire, upon which the hours are sounded. One of the jobs is testing these gongs, listening to the tone, and then adjusting the gauge at the end to make the tone right. The blind are used almost exclusively for this work and perform it as well or better than sighted workers could do.

In finding jobs for the handicapped, we look at the disabled man's capabilities rather than at his disabilities, and if we look long enough and carefully enough we will find many jobs for which the individual disability does not disqualify. If men are trained and put in those jobs they will, of course, succeed. This is, however, not as easy as it sounds. It requires long and painstaking work.

The most successful mechanism for discovering possible jobs is what is known as the industrial survey, with special reference to the placement of the handicapped. Such surveys were undertaken first in a very informal way in Great Britain, where committees studied certain trades and published statements of what opportunities there were in those trades for disabled men. Canada then took up the work and has done a most thorough and intensive job. The Invalided Soldiers' Commission has surveyed industry after industry, listing every process in the fields covered with relation to men with all types of handicap—leg cases, arm cases, blindness, deafness and the like. Work of this character brings easily within range of the placement officer or vocational adviser a large number of jobs, which can be sifted down in relation to any individual case. Some will be found exceptionally favorable, others medium, and so forth, and there will be discovered many processes that could not be known of unless some such large scale operation were carried out.

What is the course of the disabled man from the battlefield on which he is wounded, back to self-support? He passes through the mechanism of the medical corps at the front, through the clearing stations and base hospitals, and when it becomes evident that he is no longer needed for military service and can no longer be useful for duty at the front, or that he will be laid up for a considerable period of time, he is invalided home. He passes here through the reconstruction hospital, which differs from the ordinary hospital, in layman's parlance, only in the more intensive treatment given. He is retained just as long as he profits by treatment, and the endeavor is to restore the man to the best physical shape possible.

While he is in the hospital, in addition to medical and surgical care, he is constantly under treatment of another character. In the first place he is there getting occupational therapy—something that will keep the mind active, something to drive away the tedium of idleness and keep him from thinking about himself, something that gets him again interested in life. Occupational work of a very simple nature is sometimes carried on at the bedsides or in the wards and serves the double purpose of interesting him and being of permanent value. For example, if a man who is in business in a small way can be interested while in the hospital in learning some of the principles of accounting, it will enable him when he goes out, to run his business better, and yet at the same time serve the therapeutic

purpose in view. It will leave him at the end of the treatment with some definite asset as a result of his stay in the hospital.

One of the first necessities is to overcome the natural discouragement which comes when an able-bodied man—and the men of our forces are more than able-bodied; they are the pick of the country—when you take a man like that and strike him down from such full physical power and make him, as he thinks, a cripple for life, it is a very desperate experience. Our injustice to the disabled man in the past has made it even more of a despair than it should be, for he often happens to know of the man who used to work next to him in the factory and who lost an arm. Where is that man now? Well, the superintendent thought he would be good, and made a messenger's job for him. He is getting \$12.00 a week now whereas he used to earn \$30.00. The soldier also knows another man who was injured in the factory. What is he doing? Selling pencils on the main street. And so he could go on, practically without exception, thinking of case after case where disability meant practical hopelessness. That is what he visualizes as the future for himself, and in first dealing with him you have to grant that the deduction is theoretically correct and then simply endeavor to tell him that things have changed, that the matter is seen in a wiser way, and that much better provision is being made by the government to deal with his situation. At the earliest moment, men of high caliber should be brought in close, friendly, and confidential touch with the disabled man, to show him what there is ahead, and lead him to begin to think about his own plans.

Now, when he has once gotten a little spirit back, when his ambition is aroused again and he begins to think he can do something, the next necessity is to find what he shall do, and that necessitates what is known in some of the countries as a vocational survey. We have found, let us presume, through industrial surveys and other means what jobs are possible to the disabled. We are asked again and again, and I suppose everybody who is interested in this work has been asked the same question: What are the jobs for the one-armed man, what are the jobs for the one-legged man? For answer we must say that there are none. Experience has shown that for five hundred one-armed men there are probably four hundred different jobs that they might most profitably fill, and the chief criterion that has been found effective in determining the

choice is the past experience of the man. You are dealing with a man—not with a boy who is making his first vocational choice. You are dealing with an adult who has had actual experience in jobs. That experience should not be wasted, but every effort made to conserve it. The principle may be illustrated by two superficial examples. Let us presume that we have a railroad hand, a brakeman, who has come home from the front with a leg off or a foot off. That is not a serious handicap in some senses but it would at least prevent him from hopping on and off freight cars. What are you going to train that man for? If you have found printing a good job for a man with a leg off, would you train that man to be a printer? The answer would be most decidedly negative, because such a course would waste all his past railroad experience. On the other hand, he might be trained to be a competent telegrapher and sent back to the railroad he worked for in the past. We can then say, "Here is John Jackson. He has worked for you for a number of years and you know him to be reputable, sober and steady. Although he cannot go back to his old job, he has been trained to be a competent telegrapher, and perhaps you can put him in the train despatcher's office or in a switch-tower on the road." The minute he gets that job all his past experience as to rolling-stock, time schedules, and railroad practice in general immediately comes into play, and is saved rather than thrown away.

The organization of re-education has varied in the different belligerent countries. In France the first school was started by a municipality, and other schools, in sequence, by an employer's association, a department, or state, a charitable organization, a trade union, and various other organizations. In fact, there exist today schools under almost every type of administration. The result is that the work varies widely. If you go to one city you will find the courses of a certain length, and if you go to another city you will find that they are only half as long—or twice as long. The result is that the advantages of the French soldier largely depend on how lucky he was in picking out a place of residence before the war. This is in some ways unfortunate and gives men in some localities a better chance than the men in others. The type of work varies tremendously, the standards being different in practically every school. The French saw the difficulty of this and have founded a National Office for War Cripples. That office endeavors

to standardize the work but it has no real authority except in the control it exerts in the award of subsidies to some school. The office requests the schools to standardize, and sends out questionnaires, but does not get much further than that.

England's experience holds for us a lesson by which we have profited. In this work of re-educating the disabled, England found herself in no worse situation than any other country, although without any provision at all. The work did not start early. A great many of the disabled soldiers in the first year of the war were discharged, at a time when there were only two charitable institutions to which they could turn. These two did their best to meet the situation, but it was a bigger job than any charitable organization ever undertook before, and they were not able to handle the situation. The government stepped in and formed a statutory committee and gave that committee some funds, expecting further funds to be supplied by the charitably disposed public. But the British public did not consent to this and said to Parliament, "This is a national job. The soldier disabled in the service of Britain should certainly be taken care of at the expense of the nation." That was where the job belonged. So in the third year of the war the whole work—pensions, medical treatment after discharge, re-education, placement—was turned over to the Ministry of Pensions and is now under one single administration.

The only country that saw the job from the first as a national responsibility was Canada, and I think it is a very great and lasting credit to our northern neighbors that they did so. Practically from the beginning of the war, no Canadian soldier has had to be in any way dependent on charity or philanthropy.

In conclusion I want to point out the importance of two other factors upon which I did not touch before. You may have re-education, you may have schools, you may have hospitals, and they may be the best in the world, and yet the work is not going to succeed unless there are operative two human factors: first, the spirit and ambition and enthusiasm on the part of the man himself; and second, the understanding of the subject and the support of the program by the public at large.

We are amazed as this work goes on at finding all over the country cripples who, in spite of every disadvantage against them, in spite of the public attitude, in spite of no means of help at hand,

have made good and have overcome their obstacles. The help of those cripples is a great service in dealing with other disabled men because they can do more than any one else to demonstrate what can be accomplished and to cheer the men along. There are also ways of bringing this kind of enthusiasm and this kind of encouragement to disabled soldiers. One thing that the Surgeon General of the Army has done is to prepare a series of films showing successful American cripples. This series of films is to be shown in military hospitals abroad and will provide a very graphic demonstration to a man who has been disabled that he is not down and out. Another feature is the publication of a "cheer up" book, which contains the autobiographies of successful cripples. In Germany they have used, with good success, a book under the title of "The Will Prevails." The Surgeon General's office is getting out a magazine called "Carry On," the object of which is inspirational—to give medical men, nurses, and all others concerned some idea of the purpose and character of the reconstruction work.

Dealing with the cripple himself is, perhaps, the easiest end of the problem, because if we do the work well and put real people into the game, he will take care of himself. The American is not easily downed and if you give him half a show he will "come across" with his end of the job. But to enlist the support of the public is a much more difficult thing. The public has not done much but injure the cripple in the past. If we train men and send them out into the community, with the public reacting to disabled men as it has in the past, the whole effort will be near a failure. This cannot be emphasized too clearly.

The family of the disabled man gives him no constructive help. The employer has always been willing to give the cripple charity but not willing to give him a job. The public at large has thought its duty to disabled men in general was discharged by offering them alms, or its duty to the disabled soldier largely fulfilled by entertainment.

One thing which will come home to us is the damage that is going to be done some disabled soldiers, through using them in a liberty loan campaign and other drives of a similar nature, to serve as object lessons, make speeches, and the like. The public may be in need of that kind of appeal, but it is certainly going to do the disabled men themselves no end of injury and it is going to

be years before those men will recover from the effects of being made popular heroes in that way.

It is doing just the kind of thing that the people who are working with cripples are trying sedulously to avoid. We had a young Canadian come in to see us a little while ago. He was a disabled man who had been brought to this country by the Red Cross, and who had been going around making speeches. He came in to get employment and when he was asked what kind of work he wanted he said, "A job in some kind of propaganda." He did not want a trade employment or regular work but he wanted to go around, be in the public eye, and make speeches. I need not emphasize how injurious it is to have many of the ladies think that their duty to the disabled soldier is to entertain him at pink teas and in an unwise and inappropriate way. That again sets the man back. To entertain a man is easy but to give real thought to what you should do for him is hard. It is a public duty which we cannot impress too strongly, that every reaction, every influence on the returned disabled soldier shall be constructive, and help to build up character rather than aid in any way in breaking it down. That is the last link of the chain and that is something that the government or any other agency cannot provide. The public will decide whether the work of rehabilitating disabled American soldiers is going to be a complete success.

We know from the demonstrated results what can be accomplished. In the words of one European writer, "there are no more cripples," and the literal truth of this statement is in process of demonstration. There may be physical cripples, but certainly with the best provision and the best help of everybody concerned there need be no social and economic cripples consequent on the engagement of American forces in the defence of civilization.

EMPLOYMENT OPPORTUNITIES FOR PENNSYLVANIANS DISABLED IN WAR SERVICE

BY LEW R. PALMER,

Acting Commissioner, Pennsylvania Department of Labor and Industry.

Pennsylvania was the first state in the Union to take definite action in preparing for the rehabilitation and proper placement in industry of its disabled soldiers and sailors returned from war service. Seven months before the Smith-Sears Vocational Rehabilitation Act was passed by Congress and approved by the President, the first step in a state-wide plan for proper placement in industry of war veterans handicapped by various types of disability, was outlined before a large group of employers, employes, industrial surgeons, representatives of civic and other associations attending the Fifth Annual Welfare and Efficiency Conference of the Department of Labor and Industry at the State Capitol at Harrisburg in November, 1917. It was realized, even at that early date, when comparatively few American troops were in Europe, that Pennsylvania, with its large population and great industrial plants, would be required to provide a large proportion of all the fighting men and munitions of war to go from this country and, consequently, that its rehabilitation problems would be correspondingly great.

QUESTIONNAIRE DEVELOPED

One result of that conference, in addition to impressing the importance of the rehabilitation problem upon the industrial representatives present from all sections of the state, was the development of a questionnaire which, in January, 1918, five months before the Federal Rehabilitation Act was passed, was sent to 30,000 industrial plants in the Commonwealth of Pennsylvania. This questionnaire, in printed folder form, presented on its outside page a letter to employers, pointing out the importance of the rehabilitation problem and the necessity of proper reabsorption of disabled men at suitable tasks in industry.

The main questionnaire, on the inside of the folder, designated thirty-eight different types of disability and requested employers as a patriotic duty to specify, according to their knowledge, how many men handicapped by each type of disability they could employ and to specify at what tasks they proposed to employ them. The second questionnaire, on the back page of the folder, requested employers to give detailed information regarding the disabled men in their employ at the time the questionnaire was received. The purpose of this second questionnaire was to ascertain the positions held at that time by disabled men in the State of Pennsylvania as a basis for study of the rehabilitation work.

Several thousand industrial plants returned these questionnaires offering to employ at specific tasks approximately 50,000 men afflicted by various disabilities. It may be observed that the distribution of this questionnaire awakened employers throughout the entire state as to the importance of this work and not only provided a vast bulk of material of value for study in the final solution of the problem of placement of disabled men but also gave several thousand points of contact in Pennsylvania where intensive studies of occupations, specific tasks and general labor conditions may be made for the final proper placement of war-disabled Pennsylvanians in suitable and remunerative employment at or near their home communities.

STATE COMMITTEE APPOINTED

A Pennsylvania State Committee, comprising Adjutant General Frank D. Beary as Chairman, Dr. B. Franklin Royer, Acting Commissioner of Health, Lew R. Palmer, Acting Commissioner of Labor and Industry and Dr. J. George Becht, Executive Secretary of the State Board of Education, was appointed by Governor Brumbaugh, March 19, 1918, to study, in all its phases, the entire problem of rehabilitating crippled soldiers and sailors in Pennsylvania. That committee made a preliminary study of the problem and kept in close touch with the evolution of the national plans for rehabilitating the war disabled.

One of the benefits of this early activity of Pennsylvania was that it rendered the Commonwealth prepared, in a measure, to solve its own problem of rehabilitating its crippled soldiers and sailors in the event that the work had by any reason become de-

centralized and had devolved upon the several states. In other words Pennsylvania was prepared. This preparedness of Pennsylvania took definite form principally through the four administrative departments represented on the State Committee.

1. Through the State Department of the Adjutant General, the head of the military of the Commonwealth, and where records of Pennsylvanians in the service of the nation are collected and compiled.

2. Through the State Department of Health with its hospitals, tuberculosis sanatoria, dispensaries, staff and associate physicians and surgeons for physical reconstruction.

3. Through the State Board of Education, with its educational institutions equipped with dormitories, infirmaries, gymnasiums, laboratories and vocational training equipment and its well-developed state divisions of vocational training along industrial and agricultural lines for educational reconstruction.

4. Through the State Department of Labor and Industry with its:

Bureau of Employment, containing data regarding industrial opportunities and organization for placement of disabled war veterans in industry;

Division of Industrial Hygiene and Engineering, including industrial physicians and engineers, for analyses of tasks and determination of physical capabilities of disabled men proposed to perform such tasks;

Workmen's Compensation Board through which could be adjusted any tendency toward discrimination against disabled men as employees through fear of additional compensation costs.

It is altogether probable that the facilities of the Commonwealth of Pennsylvania will be utilized by the federal authorities in the rehabilitation of disabled soldiers and sailors and in their replacement in industry.

RESULTS FROM QUESTIONNAIRE

The questionnaire on the possibilities of employment for disabled men in industry sent to employers in all sections of Pennsylvania brought almost instant response from employers. Although these questionnaires, when completely answered, required considerable time and thought on the part of employers,—who at that

time were absorbed in possibly the most active industrial era that Pennsylvania has ever known,—several thousand replies were received during the period from January 1, to July 1, 1918.

Many employers made surveys of their plants to determine to the best of their ability at what tasks disabled men could be satisfactorily placed in employment. The tasks thus specified by employers for men handicapped by varied disabilities, in many instances opened new lines of thought for the employment of such men. Many other replies were indefinite, merely stating that employment would be given disabled soldiers and sailors if it were pointed out in what tasks disabled men could be suitably employed in the various plants.

From the total number of replies to *Questionnaire 1*, designating the number of handicapped men that could be employed at specified tasks, the returns from 900 plants in 60 counties of the state were selected. These 900 plants proposed to employ 49,417 disabled workers. Those returns indicate that, on a general average, each employer agreed to place approximately fifty-five men,—an average which would further seem to indicate that the contemporary shortage of labor tended to increase some of the estimates on the questionnaires. However, an examination of all the data collected showed that in most cases the number of disabled employees compared with the number of plants offering places for such employees in the various counties were not greatly out of proper proportion. In this connection, it must also be considered that among the 30,000 industrial plants in the Commonwealth of Pennsylvania there are between 650 and 700 establishments each employing more than 500 workers, and some of those plants employ thousands of workers.

The complete list of employment openings in Pennsylvania, tabulated from the questionnaires in the Bureau of Employment as to number of openings for handicaps under each of the various classes of disability is as follows:

<i>Disability</i>	<i>Number of Openings</i>
Loss of fingers.....	<div> <div>{</div> <div>One hand.....</div> <div>4,324</div> </div> <div> <div>{</div> <div>Both hands.....</div> <div>577</div> </div>
Loss of hand at wrist.....	<div> <div>{</div> <div>One hand.....</div> <div>545</div> </div> <div> <div>{</div> <div>Both hands.....</div> <div>4</div> </div>

Loss of arm below elbow	{ One arm	403
	{ Both arms	1
Loss of arm at shoulder	{ One arm	373
	{ Both arms	1
Stiff finger joints	{ One hand	2,421
	{ Both hands	1,889
Stiff wrist joint	{ One arm	1,381
	{ Both arms	489
Stiff elbow joint	{ One arm	853
	{ Both arms	51
Stiff shoulder joint	{ One arm	615
	{ Both arms	58
Partial loss of foot	{ One foot	2,135
	{ Both feet	473
Loss of foot at ankle	{ One foot	1,474
	{ Both feet	293
Loss of leg below knee	{ One leg	1,292
	{ Both legs	236
Loss of leg at knee	{ One leg	986
	{ Both legs	125
Loss of leg at middle of thigh	{ One leg	572
	{ Both legs	89
Loss of leg at hip joint	{ One leg	747
	{ Both legs	70
Stiffness of lower extremities	{ One leg	793
	{ Both legs	149
Blindness	{ One eye	5,618
	{ Both eyes	2
Deafness	{ One ear	5,936
	{ Both ears	612
Loss of speech		2,864
Repulsive facial disfigurements		6,797
Hernia		1,773
General health impairment, preventing heavy manual labor		957
Miscellaneous		1,439
Total		49,417

The places of employment offered such disabled workers ranged from steel mills to dairies, from silk mills to railroads, from cigar factories to paper mills and from lumber camps to department stores. Each reply received from an employer, indicating employment opportunities for crippled workers, has been classified in the Bureau of Employment, by industry, by locality, by task and by disability of workers for whom the employment was offered. It is obvious that each reply indicates an industrial plant for possible placement for disabled soldiers and sailors; and in these plants, surveys may be made for analyses of tasks as well as to determine the physical capabilities necessary to perform such tasks. The national officials, by authority of Act of Congress, will equip each disabled soldier and sailor with every suitable appliance to bring his physical efficiency to a maximum and will give him suitable treatment and training to fit him for tasks in industry he can most advantageously perform. From the classified employment lists, compiled in the Department of Labor and Industry, each Pennsylvania soldier and sailor disabled in war service will probably be able to obtain in his home state, a task for which he is best suited physically, a task that will give him greatest financial return according to his capabilities and that will probably be in the city or town where he most desires to reside.

The total of 49,417 employment opportunities included 47,321 in industrial work, 908 in clerical and commercial work, 16 in agricultural and 1,172 under miscellaneous classification. It will no doubt be most difficult to place in suitable employment soldiers and sailors having lost their right arm or both arms and the men who have been blinded. The few places offered for workers who had lost both hands or both arms were merely for tasks in which the disabled men would have managerial supervision over a group of workers.

The two places offered under blindness are telegraph operator and cigar maker. In each instance the replies stated that the peculiar conditions surrounding the employment in each case would permit the employment of a blind man. The telegraph operating position was qualified as a task in which the receiving of messages would be required and interpreted for transmission by telephone to a number of places. The task specified as cigar maker was merely for a unit process that a blind man could perform.

Employers throughout Pennsylvania, however, have been giving considerable thought to the proper utilization of the capabilities of blinded persons. For example, a large manufacturing plant in Philadelphia has, within the last few days, notified the Department of Labor and Industry that it is about to inaugurate a plan of employing blind persons on a dozen light drill presses. This work will be watched with much interest. Another employer, operating a large paper mill, has stated to the department that it is his belief that blind persons could be advantageously used in counting sheets of paper in some departments of the plant.

INDUSTRY'S CASUALTIES

The war has focused attention on the long lists of able-bodied men who have become maimed in warfare; and patriotic impulses combined with sound economic judgment have set in motion great forces to reclaim those disabled men as actual self-supporting producers. But at the same time the casualty lists of industry are larger, as a general average, than the casualty lists of war. And the casualty lists of industry continue in times of peace. Canada, with a population about equivalent to that of the Commonwealth of Pennsylvania, has an army of between 400,000 and 500,000 men and after four years of war, has had returned as unfit for further military service about 50,000 men, including between 1,000 and 1,500 amputation cases.

The list of Pennsylvanians wounded on the field of battle is creating much apprehension in the homes of soldiers and sailors and much attention from the general public. But a casualty list bearing, on an average, names of 650 workers injured in the industries of Pennsylvania, is received every day at the present time at the Department of Labor and Industry. Daily casualty lists of industrial injuries have, on some days during the last two and a half years, reached the total of one thousand and one hundred. An injury suffered by a Pennsylvania worker in a Pennsylvania industry is reported to the Department of Labor and Industry only when a worker is killed or disabled for a period exceeding two days.

During the last two and one-half years, ending July 1, 1918, reports of 577,053 injuries to workers have been received in the Department of Labor and Industry. That number includes 7,575 fatalities. If the army from Pennsylvania ultimately reaches the

number of 500,000, and if the total number of wounded,—not the percentage of the total engaged,—equals in two and a half years the number injured in the industries of Pennsylvania during the same period, every man in that army of 500,000 will be injured once and more than 75,000 men in that army will be twice wounded during those two and one-half years. The army of industrial workers injured in two and one-half years in Pennsylvania is greater in number than the army that either Canada or Pennsylvania is sending against Germany.

These facts also serve to emphasize the vital importance of safety in industry, which the Pennsylvania Department of Labor and Industry has been devoting its every energy to establish since its creation. Safety in industry is especially vital today when it is considered that industrial accidents remove from industry workers who are most precious in this time of war.

RESTORING PENNSYLVANIA'S DISABLED TO INDUSTRY

Pennsylvania is also taking the lead among the states in an effort to restore to industry, at suitable tasks, workers who have been permanently disabled through industrial accidents. Harry A. Mackey, Chairman of the Workmen's Compensation Board of the Pennsylvania Department of Labor and Industry, has announced that the Compensation Board is not allowing to permanently disabled industrial workers commutation or lump sum payments of compensation unless such commuted payments are to secure a home, pay off a mortgage, to purchase artificial limbs or to defray the expenses of re-education in an established institution, equipped for such re-education work. The Compensation Board will not encourage the investment of small sums in non-essential undertakings, but will insist that the injured workman give society the benefit of such productiveness as is left to him and will enforce upon the employer the obligation of furnishing that opportunity.

As a first step in replacing permanently disabled industrial workers of Pennsylvania at suitable tasks in industry, the Compensation Board has instructed its adjusters to make a complete census of all compensation cases in which lump sum payments have been allowed during the two and a half years that the board has been in existence. The Compensation Board has also instructed its adjusters to investigate each case of permanent injury, including

amputations where compensation has been paid or is being paid. In this manner, the board will endeavor to keep in personal touch with all permanent victims of injury and to give every aid toward their rehabilitation for economic independence. These activities of the Pennsylvania Workmen's Compensation Board are probably the first of the kind undertaken by any similar board or industrial commission in any state in this country.

Industrial accidents in Pennsylvania during the two years and a half, ending July 1, 1918, resulted in 3,798 amputations of arms, legs, hands, feet, fingers and toes, and the loss of 1,157 eyes. The amputations in the Canadian army during four years of war are said not to have greatly exceeded 1,200. It has been stated in the spring of 1918 that there had been thirty-four Canadian soldiers blinded during almost four years of war. In the shorter period of only two and a half years, ending July 1, 1918, there had been twenty-nine workers totally blinded in the industries of Pennsylvania. Of those twenty-nine men blinded by accidents in Pennsylvania, one worker also lost a left hand, one a right arm and one both hands in the accidents that blinded them. During those same two and a half years five workers lost both hands, one of whom lost also one eye; six workers lost both legs; three workers lost both feet; four workers lost both an arm and a foot; five workers lost both an eye and a hand; two workers lost a leg and a foot; two workers lost an arm and a leg and two workers lost both arms.

There can be little doubt that the same economic judgment which inspires the project of reclaiming men wounded in warfare will perpetuate after the war the great project of reclaiming men maimed through industrial accidents.

PLACING THE DISABLED IN INDUSTRY

BY GERTRUDE R. STEIN,

Employment Secretary, Red Cross Institute for Crippled and Disabled Men

Formerly, if you met a beggar cripple on the street you dropped him a penny. Sometimes the thought crossed your mind "Maybe this man can work." You then inquired among your friends as to a possible job for the man. Finally your brother-in-law told you he could employ him. It never struck you to try to discover whether the beggar suited the job he had open, and your brother-in-law's chief thought in taking the new employe was to please you. The man remained a day at work. For a few weeks after that, you avoided your brother-in-law, as you were not anxious for the details of the disorganization the beggar had wrought in his day's visit at the factory. This is an example of the old kind of employment work and it is the type of placement that has been made for many years for normal as well as handicapped men.

Employment work is a very different thing from the hit-or-miss sending out of men to jobs for which they may or may not be suited. To place a man efficiently means to adjust him to the industrial world in a manner most helpful to himself, his employer and his whole social surroundings. This is a big aim. It will be many years before our employment work will reach this perfect condition, but until it approximates it, it is almost as useless as though it were not done. Most placement work is carried on no more effectively or intelligently than a man can do himself by answering the help advertisements in the newspapers.

The inception of the United States Employment Service has made us all ponder on what an ideal public bureau should be. Public employment bureau work in the United States is having its chance now. It must stand or fall on its merits. I have enough faith in human effort to believe that the United States Employment Service will be successful. It can only succeed, however, if the country comes to realize its tremendous importance in our economic adjustments during the present crisis, and after the war. Its problems are

many and varied. Employment work needs the help of all the brains in the country at the present moment.

In initiating an employment bureau for the handicapped we have the advantage of having a small bureau. We can work for perfection of technique rather than for large figures in placement. In a large bureau, one is hampered by the insistence of the multitudes passing through the doors each day, and by the constant demand for large figures in statistics, and one is apt to go back to the old hit-or-miss methods. In a small bureau for the handicapped there is no excuse for neglecting any tiny detail which would prevent each placement from being as nearly perfect as human effort can make it.

I have had a vision of what such a bureau for the handicapped should be. It is not a thing which can be described dogmatically because I believe no organization of this kind is truly valuable unless it is flexible. As new improvements occur in economic thought and technique there must be adaptations. Forget your conception of the old bureau with men standing in stolid, dissatisfied lines; with unintelligent clerks filling out endless cards with material that has little bearing on the proper vocational guidance of the applicant; with the sending of workers to jobs for which they are not suited; and with the constant complaints of angry employers. My picture is a black one, but it is only because I know that with the handicapped man we must and will do something better than I am describing it.

The new bureau I will picture is one which is aimed to assist the social and economic adjustments of every applicant who comes in for work. Employment work does not mean the mere securing of positions. Any amateur can register a call for help and send an applicant to a position. Employment work means the securing of the chance for the man to make a livelihood at congenial work where he has an opportunity to make use of his best powers and potentialities. The new bureau will be based on scientific fact. It will gather statistics so that it can base the changes it makes in its organization on facts, not conjectures. The new bureau will be businesslike and efficient. It must offer a real contribution to every applicant who comes to its doors.

POINTS INVOLVED IN THE REGISTRATION OF APPLICANTS

The registration of the applicant and the first interview are the opportunities for giving vocational guidance and for accustoming the crippled man to planning out some sort of work career for himself. It is not for the placement worker to insist on what the applicant is to do but rather for him to lead the cripple into thinking of his work career as a problem he is to solve himself with the aid of an expert. The great mistake in dealing with the handicapped in the past has been that they have been led around by apron strings, and have spent most of their time in commiserating themselves upon their fate, rather than in making an effort to improve their situation. The crippled man is surprised to meet some one who treats him like a normal man, and instead of offering merely sympathy speaks of employment as an event of the near future.

There is a decided advantage in having the placement worker give this vocational advice, because he has so many instances of other men successfully placed to cite, in encouraging the applicant to think that he too has the same chance for success. The placement worker also has the decided advantage of being in constant touch with the supply and demand of labor. This advice is based not on theoretic knowledge but on the facts he gathers day by day on the opportunities in industry for cripples.

The registration of the applicant is much more complicated than in the old bureau, but it is explained to the applicant that a more effective placement can be made if the questionnaire is completely filled out. As full a medical history is secured as is possible and the cripple is told what work is unsuitable for a man in his physical condition. The home history is recorded so that the family background can be understood to some degree.

The applicant is questioned as to his education and as to any special training. Where the man desires clerical work, he should be given a clerical test. A study of the educational history gives one the opportunity to speak of the possibility of further training. An employment worker, who does not make use of this chance of inducing cripples to take further technical training is only doing half of his job. One must always remember that this new kind of placement worker is not only endeavoring to collect large statistics of positions secured, but is working rather for the best adjustment for each applicant. This point cannot be emphasized enough.

The placement worker who is not thoroughly acquainted with the educational resources of his city is not effective. What more fortunate place is there in which to speak of the advantages of further education to the adult than the employment bureau? An unskilled cripple is worth about twelve dollars a week. If he has training, you can show him that you can later offer him positions paying twice as much.

The work history of the applicant is recorded in great detail. It is important that this record be complete. Frequently some latent inclination or talent is discovered in the position held for a brief time, rather than in the one held for a longer period. If we truly want to discover what employment will be congenial to the man, we can only do so effectively by having him talk in detail about his past work history, its successes and its failures. It must be explained to the applicant that an employer is to take him because his industrial history warrants us in thinking that he is suitable for the work and that with the training he will get in the factory he can advance there.

The vocational guidance is the difficult part of the task of readjustment of the crippled man. The mere placement is comparatively simple to one who is acquainted with the technical side of the subject.

SYSTEM OF PLACEMENT

The securing of positions has become a much simpler matter now that coöperation between various employment bureaus is an established fact. In New York we have an effective clearing house which is invaluable in widening the opportunities open to crippled men. Every method of publicity and advertisement must be used to bring the fact before the employer that here is a bureau organized more carefully than the average bureau, and which is prepared to give him effective service. For it is true that a placement bureau for the handicapped must be more efficient than the average bureau, or it will not live. One cannot expect employers to use such a bureau in preference to one where they get normal men, unless their demands for help are filled as effectually. The bureau must have a file of satisfied employers who can be called upon when a particular applicant seems suited for their particular job. An employment bureau for the handicapped which does not make use of all of these opportunities for enlarging the chances open to its applicants is not

fulfilling its whole task. An employment bureau for the handicapped should be capable of securing a position for a teacher as well as for an elevator man, for a draftsman as well as for a lathe hand.

An industrial survey of the opportunities for cripples in the city must go on at the same time as the employment work and in conjunction with it. This is an effective method of discovering new opportunities. It is the most scientific method of finding the processes of industry for which the handicapped are suitable.

This whole system of placement is valueless unless it is properly followed up. Frequently a man secures a position for which he is utterly unsuited. He becomes discouraged and enters the army of the unemployed. A little reminder from the employment office just at the time when he is losing heart is very helpful in giving him a new impetus to work. The applicants should be urged to visit the bureau frequently and an evening office hour should be arranged for that purpose. They should be induced to correspond with the office about difficulties that arise in their work. Follow-up work in the factories should be discouraged because it makes the cripple feel that he is to receive special attention in his workplace. It is much better to advise the man and have him settle his industrial difficulties himself.

By keeping systematic and full records and by a follow-up system, one can gather a mass of valuable industrial facts by one of the most economical and effective methods of which I know. A man is apt to tell you the true facts about his industrial history more readily when he realizes that by giving you these facts he is helping himself, than he is if he thinks one is just making a theoretic investigation valueless to himself. The employment bureau I describe can gather a limitless number of scientific facts. In new ventures of this kind in the future, we can base our organization on facts, not conjectures, if our knowledge is honestly secured.

No bureau can be truly valuable unless it is flexible. With the experience gained from scientific facts let us hope that we can be ever changing our methods, so that some day we can see effected the finer type of employment bureau. Let us offer to every disabled man a system of rehabilitation as perfect as we can plan it. Let us feel that we have left no stone unturned to give him "a square deal."

THE EMPLOYMENT OF DISABLED SERVICE MEN

BY FREDERIC W. KEOUGH,

National Association of Manufacturers of the United States of America.

Illustrated feature stories on the re-education of the wounded soldiers and sailors usually describe mechanical and human miracles. Such presentations of the subject cause us to think that there is an enormous task ahead of us in making, by mechanical means, whole men out of little more than remnants. To accept this as indicative of the problem of re-education is to warp the judgment and misdirect the general endeavor. At the outset, let it be understood that the causes of military disability are, to the extent of at least 50 per cent, of a medical nature. A disabled soldier or sailor is not necessarily a man without legs or arms.

Ninety per cent of all returned wounded men go back to their old jobs. With them the employment problem is simple. Only ten per cent have to be re-educated. Undoubtedly many more men are injured annually in American industries than we may expect in a year's war. Seventy per cent of all men injured in war or peace never had a trade. Consequently the teaching of any trade or any kind of machine operations to this seventy per cent gives them better incomes and easier work than their former occupations. To the extent of over ninety per cent re-education is nothing more than common, ordinary industrial education—in established industrial schools, in day, continuation, and night classes, and in factories when the crippled man is so nearly competent to do the proposed work that the employer can properly put him to work, supervised by some one in the establishment.

In putting disabled men back into industry, there is no room for the spectacular. Our soldiers will go the limit in their military life and we will go the limit in appreciation and care of the injured. Until now, however, and apparently in prospect also, re-education means, and can mean, only the kind of industrial training that is always given in educationally intelligent countries to all workers who need it, with only a little more intensive personal consideration of the capacities and limitations of the pupil. Existing facilities for

industrial training may need to be greatly increased because of returning soldiers, but they need to be increased anyway, because America has only begun to provide facilities for the industrial training of her working people. The development of existing facilities along the usual lines will enable these extensions to serve perfectly in later peace times.

The life of a wounded soldier or sailor returned to industry will be pretty much what he himself makes it. If he takes it up with the energy and decision that carried him through battle, he will come through in a way entirely satisfying and gratifying to himself. The results will be commensurate with his own efforts. The man who finds and loves his work will be bountifully repaid.

For the needs of industrial production, to pay for the immense indebtedness of the nation, to carry out the developments of peace, the country will require not only the men who went to war but new hands to take the place of those gone forever. To expand beyond the pre-war stage will supply occupation for every hand that can be induced to work. When the war is over, business men will be forced to utilize the capabilities of the cripple, trained and untrained, and of the blind. The labor supply will not increase as rapidly as the needs of business.

Bringing the physically unfit and disabled man to an irreducible minimum is a national obligation. In caring for disabled soldiers and sailors, no source of possible benefit to their condition should be left unexhausted. If disabilities make it inadvisable for a man to follow his former employment, he should be fitted for a new occupation by appropriate training.

But of what avail is all this if the injured man is not afforded opportunity adapted to his capabilities? The number and character of industrial opportunities are the determining factor in the success of any effort to rehabilitate disabled men. Unless manufacturers are willing to employ restored and re-educated men; unless it is known how many and what kind can be taken into industrial establishments, the workers will stand idle in the market place.

The problem of the handicapped man is not a new one, for he has been with us for a long time and our records of industrial accidents, even for a year, ought to supply us with enough material for the problem of what to do with them. The matter of rehabilitation of the men disabled in the present war will be a matter of national

concern for at least fifty years. It should be approached soberly, therefore, and with none of the hysteria that attaches to the homecoming of the military hero. It is one thing to welcome back a soldier in uniform and if he is suffering from the effects of wounds to overload him with attentions. When he lays aside the military garb and pursues the path of the civilian, the honors and attentions that have been showered on him are likely to cease.

The United States has resolved that every returned soldier shall have a full opportunity to succeed. When necessary, war cripples must be thoroughly trained in schools and industry, and industrial opportunities must be disclosed for those who need occupation. Jobs must be adapted to them, in order that they may become competitors in every sense with the workers who are whole. Occupations that do not exist must be brought into being. Certain work must be reserved for cripples, and devices must be discovered and adapted that will fit the victims of war back into all the ordinary activities of life.

How work can best be provided and adapted to crippled men is in the long run an individual problem, which must be met and solved by each employer. The attitude of the typical employer is most likely to be this:

"I am first an American, a patriot, and willing to do my share in every national duty. I will privately aid these men in every way possible; but I am also a manufacturer with economic responsibilities to my stockholders, employees and others and as such I cannot consider these men for employment unless I am convinced it is a sound business proposition."

The bulk of the evidence at hand proves that the restoration of the crippled soldier to industry can be carefully worked out, so that it will represent a sound business proposition for the employer, a fair opportunity for the wounded worker, and an economic advantage to the community.

The two most important phases of the question, so far as manufacturers are concerned are: First, how much and what form of coöperation can be expected of the employer? Second, what must be the contribution of the disabled worker?

As to what lines of industry hold possibilities, letters from executives give assurance of openings in a surprisingly large number of industries. As a general rule, it may be stated that industries requiring great strength and endurance, rather than skill, hold fewer opportunities than those where the processes are duplicated and skill in operating machines is essential. In industries having numerous power processes, it has been found that almost any machine at which the operator can sit, can be run by a workman who has lost one or both legs.

Particular study is needed in each particular plant to find out

where men can best be fitted in. In this respect, every manufacturer can be of great assistance, simply by telling other manufacturers of any means he may devise for employing a man who has lost any of his members. A manufacturer may discover a way of employing crippled soldiers not known to other manufacturers, and nothing can be more patriotic than passing on the information. Many have already shown a keen interest and deep appreciation of the problem by giving to the National Association of Manufacturers detailed information about places within their processes in which disabled men could be utilized. A digest of letters received reveals a wide range of opportunities and these comprise but a partial list.

FIELDS OPEN TO THE DISABLED

In the clerical field are undoubtedly the greatest number of openings. Unlimited places are offered in the shipping, receiving and bookkeeping departments of almost every factory. Stenography and typewriting likewise hold possibilities, particularly for the blind. In France, numerous blind soldiers have been trained to take dictation on a special machine, and they transcribe their notes rapidly and accurately. Clerical work, of course, requires that the injured man possess a certain grade of intelligence and general education, and when either is lacking, the task of placing him in industry becomes more difficult. Obviously we cannot turn all our injured soldiers into the clerical field. The great majority will by natural inclination and training return to factory work.

Machinery building firms state that they have numerous opportunities, and almost all the prominent automobile manufacturers make similar expressions. One great automobile plant has stated that at present it has in its employ 1,500 more or less disabled men, and out of these, almost 300 are suffering from the loss of either hands or legs; these crippled men, when placed in work that is properly adapted to them are found just as efficient as the other workers, showing that the crippled worker can hold his own with his fellowmen, if placed in the right surroundings. This may almost be taken as a general rule for all industries in which the crippled worker is to be utilized.

Representative boiler-making firms state that in their engine rooms and machine shops, men with but one leg can be utilized, while from tool makers, shoe manufacturers, who state that they

can utilize one legged workers as edge trimmers, etc., hook and eye manufacturers, clothiers and hatters, metal novelty firms and even from iron foundries and machine shops, comes the same opinion. Manufacturers of various accessories such as spark plugs, electrical goods, telephone equipment, porcelain specialties, etc., also offer openings in their plants.

In the plate glass industry, a workman suffering the loss of a leg can be used to much greater advantage than one with the loss of an arm, although the latter can also be utilized. A phonograph company states that unquestionably it will have places where men who might be disabled by the loss of a leg can be used, and this opinion has also been voiced by a multigraph firm, by the wire and cable industry, the machine building industry and by numerous metal firms. In the underwear industry many firms have offered to take disabled men, and one even offered to employ them up to one-sixth of their operating force.

A cooperage plant in Ohio offers to take at least five men, and several tanneries have made similar offers. A watch case firm in Philadelphia states that in this industry a considerable number of people can be employed on operations that are performed entirely with the worker sitting. Piano manufacturers and paper companies make the same statement.

It is the general opinion that on account of the heavy nature of the iron and steel industry, few openings are possible for the crippled worker; but a large steel corporation in Chester, Pa., announces that it will be willing to take from eighteen to twenty disabled men, and a New Jersey iron worker makes the same offer. A Detroit steel casting company announces that in the core room a considerable number of these workers could be employed, as all the materials are brought to and taken away from the men. A large stove manufacturer in Milwaukee is confident that he can utilize at least 100 such workers in his business.

The printing industry undoubtedly holds many opportunities, for many of the smaller machines, particularly in the composing room, can be operated while the worker is sitting. A man familiar with linotype composition work, who might be blinded, may easily manage the keyboard by the touch system.

In the list of industries holding opportunities for the men crippled in their lower limbs, the positions named are almost en-

tirely in the regular processes of the work; but it must be remembered that in almost every factory, no matter in what line, there are numerous odd jobs requiring both intelligence and skill which are particularly suitable for disabled men. These include such positions as gatemen, carpenters, watchmen, inspectors, shipping and receiving clerks, elevator men, etc., and one factory announces that it is particularly ready to coöperate in this work because its employment manager and safety engineer are both cripples. Any factory preparing to give employment on a large scale to crippled men who would have to be taught in the plant, could do no better than to have a crippled man as teacher of the various processes, because his knowledge of the worker's limitations, as well as of the work to be taught, will give him a peculiar sympathy and tact in dealing with a difficult subject.

In the foregoing, the opportunities have been noted principally for men who have the use of both arms, yet many men suffering from the loss of arms will have to be replaced in industry. At first sight the task seems hopeless, but correspondence with various firms who either employ or are willing to employ such cripples, shows that the places are much more numerous than would at first be expected.

A manufacturer of band saw machinery in Michigan announces that one of his employes who lost an arm some years ago earns as good wages as if he had two. A silicate book slate company which employs only eighteen men is willing to take three or four who lose either an arm or a leg, while a furniture company offers to take twenty-five similarly crippled. The lumber industry seems to offer numerous possibilities in this line, and many firms, notable among them a Chicago company, offered to take a number of workers who have one good arm.

For men so disabled, the chemical industry is particularly inviting, for the large number of processes which require little manual labor but careful watching, make it possible to employ a man lacking both arms, and one chemical firm in Maryland has offered to take fifteen such men and train them to watch processes. An Ohio chemical firm makes a similar offer, and I believe that these replies may be taken as an index of the general condition of the industry. Another offer for men with one arm gone comes from a wheel manufacturer, and is followed by one from a maker of wire nails, who

says that he could use the crippled men to pack the nails in small boxes.

Another industry from which are received several offers of positions for one-armed men, is cement manufacturing, and one firm undertakes to take five such men in each of its three factories, to supervise the operation of machinery. Another cement firm offers to use a man with but one good arm in sorting and inspecting returned sacks which have been used to carry the product. A Pennsylvania manufacturer in packing materials says he can use eight men with but one good arm, and he further states that he saw a man with two artificial arms and hands perfectly able to feed himself.

One offer comes from a manufacturer of automatic knitting machines, in which he states that from ten to fifteen cripples suffering from the loss of one or both legs could be used. In the knit goods industry several firms have offered opportunities, and as many of the machines can be tended by the operator sitting down, many such places can be filled by returned soldiers. Of course, fine weaving, beaming and winding cannot be performed by anyone suffering from the loss of his fingers or a hand; but there are numerous other processes in which undoubtedly such injured men can be fitted in. A clothing firm which manufactures shirts, overalls, underwear and kindred lines, states that it is possible for it to use a number of men who have lost either an arm or a leg, while a most interesting letter from a silk manufacturer in Philadelphia states that one of his most efficient workers is lacking an arm, and is now employed to advantage in the distribution of filling yarn to the weavers. This is an excellent illustration of adapting work to the man's injury, and one that can well be followed in other lines.

In addition to the examples cited which have been brought to my personal attention through contact with American manufacturers, I have learned from English authorities of numerous industrial opportunities which they have discovered through their own experience. One possibility of employing returned soldiers is as attendants at electricity sub-stations, especially the smaller ones, of which there are a considerable number in the United States. It has been found in England that the work can be done by men with one leg as long as they can stand for at least two hours at a stretch. Men who have lost one eye can also be employed, provided the

sight of the other eye is normal. At a few stations men who have lost either arm can be used, provided there is no heavy-running machinery.

Another line of employment which English authorities have developed for their returned soldiers is in motion picture theatres, where the men can be employed as operators, door keepers and attendants. The operators and operators' assistants require the use of both arms and all fingers, but men who have lost one or both legs can be employed. The door keepers and attendants can be men with but one arm or those not strong enough for any heavy work.

English authorities give additional information about the leather goods trade, which they have found holds numerous opportunities for the disabled in the manufacture of hand sewn boots, shoe making and shoe repairing.

Tailoring is also another industry in which they have found numerous openings. There are also the various departments of the furniture trade. These last include machine work such as sawing, planing, molding, boring, jointing, dove-tailing and sand papering, which machines can be operated by men with one or both legs gone provided they are suitably equipped with artificial limbs. Polishing furniture and upholstery have offered opportunities to men with but one arm.

There is another class of workers to be cared for—the partially or totally blind. So much is being done for this one class that the manufacturer need concern himself very little about their problems. But it is interesting to note, as already stated, that in France they have been employed with great success as stenographers and typists, and an electrical manufacturer in the United States has discovered that they can be employed with great success in winding armatures. These are but two possible lines which have been developed, and undoubtedly with the many agencies now handling the work, further opportunities will be discovered.

These illustrations have been taken more or less at random, to prove that no industry is entirely closed to these workers if the manufacturer will but look around his plant in a careful manner and with due consideration to the injury of the worker. He will find that numberless places present themselves, and I believe that our crippled workers will appreciate the opportunities offered and prove themselves worthy of them.

It has been the experience of firms already employing disabled men that they are so keenly appreciative of the opportunity offered, that their spirit of willingness more than makes up for the disability. Several of our correspondents who have cripples in their employ have stated this. But it has been most aptly summed up by a New England firm which says that the crippled workers in its employ are so satisfactory, that the writer has often wished that he had more such men.

FACTORS ESSENTIAL TO THE SUCCESS OF THE DISABLED

It is essential that it be impressed upon our disabled men that their spirit and attitude toward their work are the biggest factors in their success. Manufacturers on the whole are ready to give them every opportunity, but the will to make good must be strong in the workers. One firm has summed it up by saying that there is always something a cripple can do, even in the way of pure manual labor; but his value to himself and to his employer depends very largely on his own attitude towards the work. A crippled man in the employ of this firm writes the following, reproduced literally:

I have never had trouble in obtaining work, although the man who has hired me will generally say "You are lame, aren't you?" Most of my work has been clerical, but the last three years I have worked on a milk team, cooked aboard a private yacht and canvassed for mail order houses, besides watchman at the Aero-plane Company. I can lift a good weight, but cannot carry, and can take a hand at most anything. I think after the war is over our maimed soldiers should take account of what they had done and then think out something they think they now can do along in that line and then go after it. Confidence with a fair education are, I think, the things that will aid our men.

The need of employing every available worker will be with us not only this year and next but for far in the future. Employers are glad to take disabled soldiers and sailors into their establishments, and give them training that will enable them to put out a first class product, but they have to keep in mind at all times the necessity of production. Therefore, they do not wish to give disabled men work that, in the language of the day, will "hold them for a while." Many of the physically handicapped who cannot work at the bench and earn the old rates of pay, can, however, apply their proficiency in receiving instructions and imparting them in the supervision of other workers.

In the consideration of the crippled soldier problem, it must be kept in mind that there is little, if any, sentiment in business any more than there is any patriotism in politics. Employers are not in business for their health or for philanthropic motives; they are merely middle men who sell their products for their real worth, and neither the employer nor the employe can get more out of anything than he puts into it. The reward of the workman, therefore, is in accordance with the proficiency and skill which he expends.

The fact that a man is a disabled soldier or sailor is not enough to place him in any systematic manufacturing plant. He must be productive. If he displays any aptitude for training he will be taken in, instructed and paid while learning, and he will be shown that merely average production is expected of him.

Many of the wounded men who return will require no special training, and these naturally will be the first to find their way back into industry. They will be welcomed, for war is teaching us the necessity of conserving and utilizing every ounce of our labor strength. The returned soldier can always find work, for mature men are teachable, and the returned soldier will be so thoroughly in earnest that the instructor will not only be surprised with the rapidity with which he picks up the work, but the accuracy which he can command.

The disabled service man looks forward with joy and anticipation to the day when he will get back to work. There need be no thought of coercion in restoring such men to industry. The suggestion of the surgeon of the early possibility of a wounded soldier taking up his old-time vocation is always gladly accepted.

Manufacturers and employers are interested and satisfied with the well-defined policy that has been laid down by the federal government, through the Smith-Sears act, which places in the hands of the Federal Board for Vocational Education the duty to discharge one great debt of the state to the victims of war. Those requiring training and retraining will participate in the most advanced reconstruction program attempted by any nation.

Every American soldier on the firing line ought to be buoyed up by the consciousness that if he suffers injury, his wounds will be healed, his return home will be expedited, his special occupational ability will be analyzed, his ambition stimulated and every effort will be made to enable him to gain a position of economic independ-

ence. He can feel in his heart that the hardships he undergoes are appreciated, and know that a sincere effort is being made for him.

The men interested in the work of rehabilitating injured soldiers are not restricting their imagination to the present. They are looking forward to a period after the war, when hospital reconstruction and trade re-education will continue, reducing the wastage of civil life and adding to the new spirit of coöperation between capital and labor.

With the field of labor ploughed as it never was before, there may be not merely one job, but ten for every soldier uninjured or disabled. It will take a brave prophet to indicate the condition of the labor market after the war. The provident manufacturer will, however, as far as possible forecast the situation. He will discount the conditions that obtained at the conclusion of the Civil War, when the boundless west extended its arms in its opportunities to the returning soldier; he will realize first of all that the industrial nations, England, France, Russia, and even Germany, whatever the status of this pariah may be—will strain every competitive trade effort; he will bid high for labor; he will rejoice when the old men come back; and to the disabled he will extend not merely sympathy, but opportunity.

The message of the employers of America is this:

To Our Men Who Have Fought the Good Fight:

Every American manufacturer is proud of you, and the splendid spirit you have shown. They want you to feel that they stand ready to coöperate with you in every way that can show appreciation of your sacrifice—both now and after the war.

There are limitless openings in industry for you. Come back to work with the same spirit you have shown in fighting—and you'll make good.

In the long run, success depends on your spirit, and we know that won't fail. You have had a chance to show your mettle "Over There"—and you have lived up to the opportunity. Come back with the same determination to be an independent, self-supporting member of the community, and the American manufacturer will see that you have every opportunity to realize your ambition.

A PRACTICAL HELP FOR CRIPPLES, AN OPEN SUGGESTION TO ALL EMPLOYERS OF LABOR

BY FRANCIS W. MACK,

A. & M. Haydon Company, Philadelphia.

In this article I am going to give a little of my experience in hiring handicapped men. I have hired altogether about nineteen or twenty. I have had about seven infantile paralysis cases, I have had about six with one leg off, one without any legs at all and one demented. I also have one partly blind and I have had one paralyzed from the hips down. I could always find work for them and I have found that they are very good workmen. I still have some of them, while some of them have graduated, you might say, and gotten better positions. Some of these that I have employed were twenty-three or twenty-four years old and had never worked before in their lives, were never employed, never had anything and had always been depending on somebody to keep them. Some of them have taken a night course at Peirce's College. One of them I believe today, who has had infantile paralysis, and has one leg eight inches shorter than the other and the left hand a little short, is making five dollars a day in Ford's as a stenographer. He took up that course. Another one has taken a course in bookkeeping. He has a leg off, and I believe he is today with the United States Express Company at 12th and Market Streets.

I have found in my experience that some of them were wicked, and that while you could handle some with gloves others you would have to handle by force. Taking their work for the year round, I would imagine that they do more than a boy or young man with all his faculties, because they come in in the morning fresh; they were not running around the streets and were not out late at night, and so were better able to go to work in the morning. As it is now I have about five or six—I have one colored man there with a leg off and hip out of place. I have another with a leg off—a boy about fifteen years of age. As I said before, I have one partly blind and paralyzed, and another one partly demented. He is a man who could not count, could not tell time, and, in fact, he cannot do anything unless he is told to do it. Nobody would hire him until I

hired him. I have another one paralyzed from the waist down. I understand that happened through his parent's neglect when he was very young. He was kept by the Children's Aid Society up to the time that he came to me and asked me if I could not do something for him. He is making good. Somebody has to supply him with material as he cannot go after it, neither can he lift any heavy pieces; these have to be lifted for him.

I think there are other manufacturers in this country and in this city who could employ more of these cripples if they would give a little bit more time—have somebody to wait on them. I had one occasion where the representative of a big factory in this town came out to see me to ask about my experience with these cripples, how I found them, and what kind of work I gave them to do, week work or piece work. I told him piece work, because then the men got paid for what they did, and I took them up—one of the State Employment Bureau agents being with him—and let them see them at work. The only objection the manufacturer raised was that he was afraid of their coming down-stairs, as there are three or four flights of stairs in his plant, and if these people had to come down all those stairs there might be some accident. I told them, however, that I always allowed them to go ten or fifteen minutes earlier, and by doing this they could get a car to go home without being in the crowds. With reference to accidents, I want to say that I have not had as much as a scratch to one of them. These men are very careful about every step they take, and you do not find them running around or standing talking to the others. I think our traction companies when the soldiers come home could use many of the one-armed and one-legged men as conductors, and I think that every man in the army that comes home with a leg off or an arm off could find employment, between the railroads of the United States and the street cars. In my experience in traveling in business I find that in making out a railroad receipt it is a form that is copied from one to the other, and a man or boy does not have to have brains to do it. All he has to have is good sight and be able to copy the receipt. If you refer back to our last Civil War, you will find that things were different then from what they are now. Our men did not have the education that our boys have over there. I think that every one of them can make good in some kind of office, and work as well, whether he has a leg or arm off.

THE ORGANIZATION AND OPERATION OF THE ST. LOUIS PLACEMENT BUREAU FOR HANDICAPPED MEN¹

BY G. CANBY ROBINSON, M.D.,
St. Louis, Mo.

One phase of the rehabilitation problem which seems to be but meagerly discussed is that concerning the rehabilitation of men handicapped internally, so to speak—of men suffering from medical conditions such as disease of the circulation, respiration or of the nervous system. Here the problem is more difficult and more subtle than when an arm or a leg has been lost. In fact some writers seem to think in terms of lost limbs and consider only the conditions that present the easier and more obvious problems. Perhaps the number of the so-called medical injuries returned from the war may be relatively small, but they play a large rôle in the question of the handicapped industrial worker, and much is to be gained by considering at this time physical disability among industrial workers while the question is fresh and stimulated by the consequences of war.

It is difficult to readjust industrially the man suffering from heart disease or from a functional or organic disease of the nervous system, because symptoms so often arise which disturb his feeling of well-being, and which discourage or alarm him. But the chief difficulty comes from our inability to determine with any degree of accuracy the amount of work that such individuals may do without harmful effects. A somewhat limited but rather intensive study of the medically handicapped from the industrial point of view has shown us the distinct advantage gained by observation of the patient in the work shop for the handicapped, conducted in connection with the hospital and dispensary with which I am connected. Here patients are put to work under the supervision of a trained teacher doing toy making, cement work or weaving. Here the patients are

¹ Since this paper was written, the contribution of Miss Gertrude Stein on Placement Technique in the Employment Work of the Red Cross Institute for Crippled and Disabled Men (*Amer. Jour. Care of Cripples*, 1918, VI, 148) has come to the writer's notice. It should be read by all interested in this problem.

encouraged and restrained by the teacher with tact and judgment and here they are visited by their physicians. The work is often only one hour a day at first, but the time and effort are increased as the patient's physical ability warrants, and usually after several weeks a fairly clear idea of what place each one can take in the open labor market can be determined. During the period in the shop, symptoms without significance can be explained away, while those of moment can be noted and avoided. Patients find their own capacity for work during the work shop period. While there they are educated in the proper method of living so as to stay within and not exceed their physical capacity, a point of prime importance in the successful placement and maintenance of the medically handicapped in a position of economic independence. This procedure as a preliminary to rehabilitation of the medically and often of the surgically disabled deserves emphasis, as it cannot be superseded by the so-called functional tests or formulas no matter how elaborately and carefully they are carried out. The only test of physical efficiency is the work test, carried out after a careful consideration of each individual.

The second phase of the problem of rehabilitation which has so far received but little detailed consideration is that of placement. It will not be practical or expedient to train each handicapped person in a new trade and find a place for him in that trade. Much can be done by industrial adjustment without extensive training, and this is especially true of the industrial cripple, as past experience has shown.

In order to bring the question down to actual experience, I wish to describe the organization and operation of the Placement Bureau for Handicapped Men which has been established in St. Louis. This bureau was organized with the idea of experimenting with disabled civilians in order to gain experience to guide in the industrial placement of crippled soldiers later. The movement was started by the wife of a medical officer who is having an extensive experience in France with cases of "shell-shock." A committee was formed composed of three socially minded women, two sympathetic employers of labor, the director of the Missouri School of Social Economy, the director of the Rankin Trade School, a lawyer and two doctors, one an orthopedic surgeon and one an internist. One of the committee volunteered to work as a full-time secretary, and the St. Louis Chamber of Commerce contributed desk space in its

office. The obvious problem that confronted the bureau was the successful bringing together of an opportunity for work and a handicapped man, and it is easily understood that before they are brought together both the job and the man must be carefully considered and prepared for each other.

The first task of the placement bureau was to investigate the opportunities of the city for the employment of the handicapped and to interest the employers in the project. A general survey of the possibilities of employing the handicapped in the city had just been made by the St. Louis Chamber of Commerce, which placed its data at the disposal of the bureau. Besides this, a detailed survey was made of various types of factories and plants, the positions that were suitable for handicapped men being noted. A few of these surveys were made by several members of the committee together and during these excursions numerous problems came up for discussion and many ideas presented themselves. Superintendents and managers were talked to and usually considerable interest was aroused, especially when the possibility of employing crippled soldiers was brought out. This phase of the work is one that must be continually pursued, and the interest once aroused in employers and superintendents must not be allowed to die. Certain positions were selected as concrete examples and employers were asked to save such places for those physically disqualified for other work.

It cannot be emphasized too strongly that a first-hand knowledge of working conditions is necessary for intelligent placement of the handicapped and this can only be gained by many visits to plants of various types. The workers must be observed and interviewed, and the mental and nervous exertion must be taken into account as equally important to the physical exertion required by the work. Minor changes in the method of factory work were often discussed with superintendents, and information was obtained as to whether the changes proposed for the benefit of the handicapped were practical and expedient. Hours of work, whether the wage was determined by piece work or time, the average wage earned in various types of work, the attitude of the employer to the laws of liability for industrial accidents, the relation of the plant to union labor, the light, ventilation, rest periods and the general hygienic condition of the plants were some of the questions which were gone into during the visits to the various factories.

These details are enumerated in order to bring out the point that in order to carry on the placement of the handicapped intelligently and successfully a bureau or agency must be established in each industrial center where the problems can be dealt with as individual problems. The work cannot be carried on by following general principles alone. Successful placement means demonstrating to the employer that the handicapped man can make good without personal favors, that he is worthy of his hire, and that the placement bureau is not a bother but a help. Successful placement cannot be accomplished without a definite idea by the person making the placement what the job asked for requires of its occupant, what difficulties surround it and how it is suited for the particular individual sent to fill it. An extensive knowledge is also necessary, as there are so many types and degrees of disability that the one best job for each individual may be hard to find and a large choice is necessary. It seems obvious that each industrial center must have a local board or bureau in order to make a detailed study of local conditions, and the knowledge thus gained is essential for the successful placement of the physically handicapped.

The second task that the Placement Bureau undertook was to find the handicapped men and to awaken their interest in the plans of the bureau. This was done by notifying various relief organizations, hospitals and dispensaries as to what the bureau proposed to do. These organizations were asked to refer to the bureau men whose physical disability hindered them from undertaking the type of work to which they were accustomed. An announcement regarding the purposes of the bureau was also made before the St. Louis Medical Society.

When a physically handicapped man appears, certain data are obtained and entered on a card. Besides the usual data such as age, address and former employment and employers, facts are obtained regarding his injury and his education. The question of employment is presented to him in such a way as to make him feel that he can do more than he has been doing, and he is told what his part must be. Care is taken to have him understand that an effort is necessary on his part, and that such an effort is distinctly worth while. In fact the psychological adjustment which is usually essential is begun as soon as the Placement Bureau has an opportunity to exert this influence, just as it should be begun during convalescence

if, as in the case of wounded soldiers, there is someone at hand to begin this adjustment.

The handicapped man is then examined by a medical man who looks at him from the point of view of the amount and type of work his physical condition will allow. A general medical examination is made to determine the general fitness, and then the particular part of the body causing the handicap is studied in order to determine if an operation or an apparatus could diminish the disability. An entry is made on the patient's card of the diagnosis and type of work advised. It is expected that injuries received by American soldiers will be studied carefully from the point of view of industrial efficiency, but the civilian cripples will not receive this attention until the medical profession is more alive than it is now to the physical requirements of the industrial worker and until it gives more thought to restoring industrial efficiency than it has done in the past. The importance of coöperation of medical men interested in the problem of the placement of the handicapped should be emphasized. The problems that present themselves as to the amount of work a given individual can do, what his limitations are and what chances he has for improvement or recovery, are often very difficult for the medical man to answer, and impossible for those not trained in medicine. Insufficient understanding of the disability of the handicapped often leads to unsuccessful placement, so a close coöperation, preferably by conference, is necessary between the person making the placement and the medical advisor. Each bureau or agency should have two or more medical men attached to it who will not only make careful examinations and give thought to the medical problems involved, but who will also take an interest in and study the industrial conditions in the district in which the placements are made.

After the type of work a handicapped man can do has been determined, the various possibilities for work are shown to him, and he is urged to make a choice or to apply for a position chosen for him. An understanding by the handicapped man of the situation he is to meet is of great assistance, and a certain amount of preparation of the man for the job is often advisable. The man's interest must be aroused not only in the job, but in the cause. The cripple must make good for the sake of other cripples, and he must go to his new job with the feeling that he will do his best for the sake of the place-

ment bureau as well as for his own sake and for the sake of his wage. This attitude of mind can only be accomplished by individual effort, expended with friendliness, sympathy and common sense.

The placements that are made must be followed up in order to discover and profit by failures. Replacements must naturally be frequent, but they will diminish in proportion to the care taken in the first instance. Many placements must be in the nature of experiments and these experiments must be watched, the handicapped man being visited at his work and his case discussed with his overseer and employer. When the bureau has had to deal with men mentally as well as physically handicapped, insurmountable problems have arisen. A bad placement is especially harmful to the cause from the point of view of the employer's confidence, and those making industrial placements of the handicapped must take great pride in their work and exercise much care not to make mistakes. If a job cannot be found that seems to fit the individual, then an attempt must be made to fit the individual for the job. In adjusting the individual to a job, an attempt should always be made to raise the standard of work above that which was previously done, and this has frequently been accomplished. Here the splendid opportunities to be offered by the Federal Board for Vocational Training will prove most useful. No doubt many of the wounded soldiers will also be elevated in the industrial and economic scale by the training they will receive during their convalescence in the so-called reconstruction hospitals.

In working with the industrial handicaps, we have found that opportunities are available for refitting disabled men without government aid. For instance, we have been able to have a man trained as a barber who was unable to continue his work as a steel worker on account of heart disease. Another man obtained training as a motor mechanic at a Y. M. C. A. night school when he was physically unable to carry on the strenuous work of a horseshoer, which he had done for twenty-four years. The young men must not be given the places of caretakers or watchmen until it is shown that nothing better can be done. The trade schools offer many opportunities to the intelligent man who is the victim of accident or disease, and the rehabilitation of the industrial cripple can frequently be undertaken with the facilities which most of our large cities offer. The St.

Louis Bureau has been in close touch with the Rankin Trade School, its director being a member of the committee.

After the St. Louis Placement Bureau had been for several months in successful operation it was taken over by the St. Louis chapter of the Red Cross and is now ready to take up all problems of industrial placement which may be presented to it from the military or civilian population. It is likely that the disabled soldiers will present somewhat different problems from those that have been encountered from the civilian population. They will be better trained, more skillful, younger, more adaptable, and will have had a varying amount of psychological adjustment making them ready to take up the problems at home with the same wonderful spirit of courage and cheerfulness that they have shown on the battlefield.

I have gone into the question of the placement of the handicapped in considerable detail in order to show what the problems are as we have found them. I wish to emphasize that successful placement of the handicapped is one of the important steps in the rehabilitation of the physically disabled, and that it can only be done by a careful study of the conditions of employment on the one hand and of the physically handicapped individual on the other hand. Such a study must be carried on by local committees or agencies and this can best be done by the establishment of placement agencies as part of all local home service work of the American Red Cross.

THE BLIND AS INDUSTRIAL WORKERS

BY LIEUT.-COL. JAMES BORDLEY,
Medical Corps, U. S. A.

Before I set forth our plans for the training of the blind, I want to say a few words about the social aspects of the blind question. There are many types of handicaps which result in economic and social troubles but I think I can aptly term the blind as the Ishmaelites of this century. They have been driven out of community life, out of industry, prevented from owning their own homes and maintaining them, and for decades they have cried out for a chance and the answer has always been "Charity." What could be more conducive to idleness, to melancholy and to despair than to know that your brother must be your keeper? I speak with some intimate knowledge of the blind when I say that they are swayed by the same emotions, stung by the same criticisms, elevated by the same praise, won by the same influence as are the seeing. Therefore, in our dealing with them and their handicaps we should be guided by the same standard that we set for the seeing. As it is now, when a man loses his sight he finds himself adrift in an unknown and uncharted sea and until of his own wit he can find his bearings he is lost. Now, this has not been the result of any intention on the part of society. It is simply one of our horrible social mistakes. Great Britain, France and Italy, at the very beginning of the war, horrified by the number of blind soldiers, began to take inventory of the possibilities of occupations for these soldiers and to start training centers where they could salvage such human wrecks. The results of these experiments—because experiments they were—have been most beneficial industrially for the blind. Now, our battle cry is exactly the same as that of our Allies—freedom for nations and liberty for individuals—and like them we are going to leave no stone unturned to see that the men who have given so much for us shall be given at least an opportunity for employment without the stigma of charity. The work of re-educating and rehabilitating the blind is probably one of the most difficult phases of the reconstruction problem that we have to face. In the

first place, the public has made up its mind that the blind except as peddlers of shoe strings and lead pencils are industrially useless. They forget all that long list of distinguished blind men—statesmen, musicians, poets and merchants; and the family, overwhelmed by its grief, misguided by its own sympathy, throws every obstacle in the way of opportunity; and the blind man himself misled by his friends and by the attitude of the world is easily persuaded to “fling away ambition.” These difficulties we are trying very hard to overcome, and we, like the blind man, need sympathy and charity less than we do active assistance and moral support.

A great many people ask me the question, “What can a blind man do?” Well, a blind man can perform any operation in which judgment based on sight is not necessary. In order concretely to translate this, the Surgeon General of the Army, in conjunction with the Surgeon General of the Navy, has established in Baltimore a training school for the blind. This training school is located on a magnificent estate tendered the government for the purpose by Mrs. T. Harrison Garrett of Baltimore. To this place are to be sent all the blinded soldiers, sailors and marines, also such men as are blinded while working in the government munition plants. To supplement this work Congress has authorized and empowered the Federal Board for Vocational Education to take the man when his training is completed in our hospital school, and carry it to completion and see that suitable jobs are provided. The Red Cross has organized, at the request of the Surgeon General of the Army, the Red Cross Institute for the Blind. This is to supply the necessary economic and social supervision for the blind men after their discharge by the various governmental departments.

→ In the preparation of courses to be taught the blind men, we first had to determine by experience and investigation what a blind man could do, and we found that he could do so many things that we began to classify them, and now when a man comes into our school we have several groups of things to offer him—professional, industrial, commercial, agricultural, blind-shop work, and home work—and just which group this man will fit into we only know after a thorough and complete study of the man. We go even further; not only do we study the man himself but the community in which he lives and his family. These are very essential considerations in the choice of any occupation. Then we have in the hos-

pitals a group of teachers culled from the best in this country. Our supervisor of education is, for instance, a man of years of experience in one of the largest institutions for the blind in this country.

Now, when it comes to industrial work we have not proceeded in a haphazard manner. We have not said too ourselves, "John Jones works in a cigar factory; therefore we will adopt that particular trade for our school." We have put on the road to make a scientific survey of industry for us a most competent industrial engineer. He is organizing a force of investigators. They will go into plants and study conditions. If a plant itself comes up to the standard which we have set, then he goes to work to analyze the jobs and to set aside in memoranda form any particular feature of any particular job that a blind man can do. Then the memoranda are sent to Baltimore to be studied by those who know the blind, to determine the feasibility, from the blind man's standpoint—of that job. If it is believed possible for a blind man to carry on such trades, the memoranda are sent back to our industrial engineer for elaboration. A complete motion study is then made of the particular operation selected as a basis for the school course of that trade. We believe that the failure on the part of many of the blind who have attempted to go into industry has been due to lack of training.

We must acknowledge at the start that the blind man is handicapped—that he is handicapped let us say 30 per cent. Then it behooves us to make up for that 30 per cent natural loss of efficiency by 30 per cent better training than that received by the seeing. Let us take typewriting. We are working now to devise a typewriter for the blind. Of course, a great many of my blind friends and those who teach the blind say that this is unnecessary, and that a blind man should be able to use any typewriter. I agree to that, but he should have one typewriter on which he can exceed in speed the sighted man, and that is what we are working for. If we succeed in getting it we will then make him an industrial, commercial asset. It is our idea to increase everywhere we can by skillful education the blind man's efficiency, and we feel that when we are able to do that, when we have devised courses and started work which will result in that, that we have at last found a way to assist the blind man into industry. Further, we have thought not only of the blind man but also of his employer. We do not intend to

have an employer discharge a single one of our blind men for inefficiency. Our industrial engineers will know when a blind man falls below the standard set by the plant and we are going to take him out and *thank* the employer for giving him a chance. We feel if we do that we will be making friends for the blind men. The incompetent will be taken back and re-educated for some other profitable position.

The manufacturers and the other business men have opened their hearts to us. They see our difficulties and are willing to help us. In fact, they have gone so far as to offer to open schools in various trades and take our men at their own expense and teach them trades—trades which will pay \$3.00, \$4.00 and \$5.00 a day—and stand all the necessary expense and worry and trouble in order to help us get the blind soldiers, sailors and marines back on the job. When we establish these things for the military blind, as Major Todd states, we have opened the way for the employment of the civilian blind as well.

Our military blind are young and as we get them started shortly after they are injured they are fine subjects for training. We realize that for the civilian blind of the past we can probably do little. We are looking in our dreams for the civilian blind to those of the future, to the hundreds of thousands for whom we should be prepared. Some scheme must be devised to get the man early, to give him the proper training and to keep him forever under proper supervision.

In our army, we have divided our services into that for France and that for the United States. Those two subdivisions have complete organizations. The work in France is under the Chief Consultant in Ophthalmology of the A. E. F. In this country there is an officer connected with the Surgeon General's office who supervises the work. The work begins abroad when a man gets back to the hospitals; there he is instructed in games, reading and writing. He must primarily be entertained with no serious attempt at any occupational study. He goes from the base to a special hospital center. There the Field Director, who is a member of the staff of the Chief Consultant in Ophthalmology, and who has charge of the active field work will have his headquarters. Here also are congregated the instructors. These instructors will teach not only literary subjects; they will show the blind men how to shave, walk with a cane and use a typewriter.

From the special hospital center, the blind men are sent to the port of embarkation to be transported across the ocean. Our teachers will instruct invalided men who are coming back with the blind, how to care for them on the return voyage. The high morale of the returning blind bears mute testimony to the splendid work of the Chief Consultant in Ophthalmology in the A. E. F.

When the blind reach the States, they go to the distributing hospital at the port of debarkation. They are there given a physical examination by special surgeons. If there appears to be a chance of saving some sight by surgical procedure, they are sent to a physical reconstruction center, devoted to eye surgery. There the man's eyes are again gone over, looking to the possibility of the restoration of vision. If it is deemed possible to do more, the attempt is made. If the attempt fails, the blind man is sent on to the blind-teaching center in Baltimore. The blind-teaching center is a military establishment under the command of a military officer. Besides the military personnel there is a civilian director of education, teachers, schools and shops. When the man completes what we have to offer, he will then be given practical instruction in shops, factories, etc. When he is through his practical training, he will be ready to be placed in the profession, trade, or whatever happens to be his future occupation. At first we will place him on trial employment, to see whether he can make good. If he cannot, we will withdraw him and re-train him for some other occupation.

In order to demonstrate the practicability of selected shop work, we are not only having our engineer devise courses, but are preparing to send out teams of blind civilians. These civilians will be untrained and they will go into factories with the full knowledge of employers that they are not what we call ideal workers but are to be used to demonstrate the practicability of the particular job at which they are set. If they can perform the work even moderately satisfactorily, we feel confident that our trained blind will be able to make of that job a definite success.

A complete "follow-up" system has been organized. The Civilian Relief of the Red Cross has divided the United States into districts—sixteen in all—from each one of which there is to be sent to our school in Baltimore one trained social service worker to be educated in our school side by side with the blind. In that way these workers become acquainted with the needs of the blind.

Each trained worker will build up in her district the necessary organization for taking care of the blind of her district. Of course, being skilled in handling the blind, these local directors will be of infinite help in seeing that the blind men live up to our expectations, and she will keep us posted as to the success or failure of our undertaking.

We believe that it is essential that the men be cheered up just as much as possible. When they come in they are met in a perfectly frank way. They are told a perfectly truthful story about their condition. We make no attempt to force them into work. We give them time to think over their future, and while they are thus occupied, we lead them along right paths. Simple things such as typewriting are started abroad and are continued, though serious work is not attempted at this stage. The teachers take advantage of this period to sound the man out as to his desires and ambitions.

In order to help the men, to stimulate them, the Red Cross Institute for the Blind has opened in Baltimore a house into which we invite one member of each blind man's family—either his mother, his sister or his wife. This relative is allowed to go to the school and see the men at work, so that she will understand the difficulties, and when the time comes for returning home, the family will be in a position to be of material service in the work which we have undertaken.

As an illustration of the practical character of the instruction to be given, let me describe our course in massage. The teacher in charge of this work is an instructor of massage in one of the important civilian hospitals. She will teach both theory and practice. But before she starts, the men will be given simple courses in anatomy and physiology by a competent physician. We have a wonderful opportunity to teach massage, because we have at our service all of the big reconstruction hospitals in the United States, in which the blind can actually work. It is our hope to turn out our masseurs so well-trained that they can be made the chiefs of this service in the reconstruction hospitals. Thus, they will get a chance to have under their direct charge from 2,000 to 3,000 patients.

We well understand that blind men will come back to this country men physically and mentally capable, also men who are

neither physically nor mentally capable, others who are physically but not mentally, and still others who are mentally but not physically capable. Therefore, we must prepare not only for trades, where the blind must enter into competition with his fellows, but for home work, where he can make as much as his mental or physical condition will permit. Some will have to be placed in organized shops for the blind, where certain opportunities, narrow though they be for the blind man, are open. The shops for the blind have in this country really proven a godsend to the blind because, cut off from the ordinary means of livelihood, the blind in the larger cities have been able to help in their support.

BLINDED SOLDIERS AS MASSEURS IN HOSPITALS AND SANATORIA FOR RECONSTRUCTION AND REHABILITATION OF DISABLED SOLDIERS

BY S. ADOLPHUS KNOPF, M.D.,

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From the addresses on the reconstruction and rehabilitation of disabled soldiers which were delivered at the annual session of the American Medical Association in Chicago¹ and from Lieut.-Col. E. H. Bruns' article on the tuberculous soldier (*The Journal*, Aug. 3, 1918, p. 373), one may obtain a good insight into the work which Surgeon General Gorgas, his staff, and the Division on Reconstruction and Rehabilitation are contemplating. In his address on "The Blind as Industrial Workers,"² Lieut.-Col. Bordley says: "After the blind will have received a practical training they will get training in professional work, the trades, or agriculture," but I do not know whether he had in mind also the training of some of the blinded soldiers in massage. As no mention of this subject was made, I may be permitted to call attention to the fact that many a blinded soldier might, with relatively little training, become a skilled professional masseur.

Brigadier General Alfred E. Bradley, Med. Corps, N. A., who recently returned from the front and with whom I communicated concerning the idea of employing blinded soldiers in this way, wrote me as follows:

In regard to the employment of the blind as masseurs, I think suitable men will find this occupation a very agreeable and remunerative one. Our people in America, however, do not utilize massage as freely, nor to such an extent, as we see it employed abroad. While in London I was very much interested to watch the work of the blinded men taking a course in massage instruction at St. Dunstan's.

¹ *Journal of Am. Med. Ass'n*, June 22 and 29, 1918. All these addresses have now appeared in pamphlet form and can be obtained from the office of the Association.

² Delivered at the Conference of the American Academy of Political and Social Science, on "Rehabilitation of the Wounded," Philadelphia, September 20, 1918.

The Superintendent informed me that they had no trouble at all in placing all the men in lucrative positions, who qualified in the course as it was given there.

The experience of the French and English has been that for about every 1000 men wounded, there will be three men blinded; this fortunately is a rather small percentage, and of this number probably only a small portion would be suitable as masseurs; I should think, therefore, that it would be necessary not to depend entirely upon the blinded soldiers as a source of supply for massage pupils and operators.

Dr. John A. Wyeth, the well-known surgeon and the president of the New York Polyclinic, suggested to me that in a class of instruction in massage for blinded soldiers, there might well be included a number of soldiers who had received some injury to the lower extremities, and other types might be found if the need for the work increased. It is particularly the blind that I wish to consider here, however, as there are so few occupations open to them. It is well-known also that a blinded person develops a more delicate sense of touch than is usually possessed by the seeing, and this would certainly be an advantage in the work.

I have been informed by friends who have traveled extensively in Japan that there massage is exclusively a profession of the blind and that they develop a marvelous dexterity in manipulating muscles and joints for the cure or alleviation of many diseases.

As to the value of massage in certain nervous afflictions, in anemia, in orthopedic and some surgical affections, I need say nothing. The utility of masso-therapy in all these branches of medicine and surgery is well-known, but not so much so in tuberculosis. I have, however, found it to be of invaluable help at that period in the life of the tuberculous invalid when his disease has been arrested, but when, owing to the prolonged rest cure, his muscles have become flabby and his respiratory system indolent. Unfortunately, the expense of giving massage treatment in large hospitals for consumptives is prohibitive, but I have often used it with most satisfactory results in private practice after the return of the patient from the sanatorium as an arrested case. I have found massage to be of inestimable benefit at such times and an excellent preparation for active physical exercise and work.

In fact massage combined with carefully graded respiratory exercises and judicious hydrotherapy, skillfully and persistently applied for a period of from four to six weeks is the best and perhaps the only means to guard the tuberculous invalid against a relapse.

In many cases, because of economic necessity, the arrested case resumes his former occupation before his muscular, respiratory, and cutaneous systems have regained sufficient strength to resist the deleterious influences of over-fatigue, atmospheric changes, the invasion of the pneumococcus, and minor respiratory infections to which the well man is immune. The policy of the Surgeon General, not to discharge the tuberculous soldier when the disease is merely arrested, but to retain him until his physical vigor is restored, is a guarantee that we will not have nearly as many relapses in military as in civil tuberculosis practice.

To return to General Bradley's statement that the physicians in this country do not use massage as freely, nor to such an extent, as we see it employed abroad, this observation is absolutely correct and is applicable to all branches of medicine, including tuberculosis.

During my recent visit to the Adirondacks, I discussed the subject of massage with Dr. Edward R. Baldwin, the Dean of the Trudeau School, and Dr. Lawrason Brown, the well-known specialist and authority on tuberculosis. Both gentlemen were emphatic in their statements that massage is an important adjuvant in modern phthisiotherapy, but one much neglected in this country. Dr. Brown stated as his opinion that we do not use massage frequently enough in tuberculosis—first, because we are strangely indifferent and secondly, because it is too expensive. He also believes that it would offer a good means of livelihood to a certain number of blinded soldiers.

I submitted the draft of this manuscript to a number of other distinguished physicians, Prof. Hermann M. Biggs, State Commissioner of Health of New York, Dr. Thomas McCrae, Professor of Medicine of Jefferson Medical College of Philadelphia, Dr. Edward O. Otis, Professor of Tuberculous Diseases of Tufts Medical College of Boston, and Dr. David R. Lyman, of the Gaylord Farm Sanatorium, Wallingford, Conn., until recently Associate Director of the Rockefeller Tuberculosis Commission in France and the newly elected president of the American National Tuberculosis Association. Dr. Biggs writes: "I have read your article outlining a plan for the training of blinded soldiers as masseurs. It appeals to me strongly and I can see no reason why it should not be put into effect. I believe that massage is work which these men would be well qualified to take up." Dr. McCrae expresses himself similarly by saying that

the suggestion of employing the war blinded soldiers in that way was an excellent one and hoped that the Surgeon General's department would take it up. As to the value of massage in tuberculosis, he regretted to say that he had not had opportunity to find out its effect on that class of patients, but that it would seem to him altogether likely to be very useful.

Dr. Otis wrote me as follows:

I have read the paper with great interest and approval. That the blind will and do make skillful masseurs I am sure, for I have seen it. We have employed at the Boston Dispensary for some years a blind masseuse with great satisfaction as an example. Massage, I believe, is a valuable means in the post-sanatorium rehabilitation of the arrested tuberculous patient, and indeed, before that period in certain cases. I therefore heartily approve your plan of utilizing blinded soldiers. I believe massage could and ought to be employed in the treatment of tuberculosis much oftener than it is, but the reasons given in your paper are undoubtedly the causes why it is not. . . . I believe your paper is excellent in its suggestions as to the employment of blind soldiers, and very timely when the rehabilitation and reconstruction of maimed soldiers is now under consideration, and it has my hearty approval. The teaching of massage to blinded soldiers accomplishes two things—it helps the crippled soldier and renders possible the application of massage to the tuberculous more extensively than heretofore has been possible.

Dr. Lyman expresses himself as follows:

I think your suggestion as to the training of blinded soldiers as professional masseurs an excellent one. Beside the wide field open to them in general medicine there would be the splendid opportunity in our new government sanatoria to give them special training in the application of massage to properly selected cases of tuberculosis. There is no question but that we have neglected this important branch of therapy in our work in America.

To the opinion of these eminent physicians, let me now add that of Major Fred H. Albee, the Surgeon-in-Chief of U. S. General Hospital 3 for Reconstruction, Colonia, N. J., and Professor of Orthopedic Surgery at the New York Post-Graduate Medical School. He writes:

The training of our returning blinded soldiers in massage is most important work in the rehabilitation of the wounded soldier. I know of no task so valuable for the delicate touch of the blinded man and especially since individuals skilled in this work are so scarce and so many are needed as the rehabilitation of our disabled soldiers goes on.

My late friend, Dr. Herbert M. King, the regretted physician-in-chief of the Loomis Sanatorium, to whom I suggested the use of

massage in his institution, gave it a thorough trial and assured me later on that I had been right in the belief that it would prove a most excellent means to overcome the tendency of muscular flabbiness and degeneration. Yet he had to discontinue it. At times he had nearly 200 patients, and massage could be given to only a few. Jealousy and discontent among those who did not get it forced him to abandon it altogether. It was not always easy to get expert masseurs who were willing to go to a sanatorium. Phthisiophobia had doubtlessly something to do with it.

If, for the reason just given, masso-therapy cannot be carried out in an institution for the well-to-do, it is, of course, even more difficult to have it in hospitals or in sanatoria for the consumptive poor. None of the difficulties raised by Dr. Brown's statement nor those encountered in the experience of Dr. King concerning the application of massage to the tuberculous civilian, rich or poor, hold good when we are dealing with the soldier whose tuberculous lesion has been arrested or is quiescent so that massage will be truly helpful in preparing him for active exercise and work.

There will probably be a sufficient number of blinded or otherwise invalidated soldiers who can take up massage as a profession. Phthisiophobia will not enter into consideration as a hindrance, for the soldier masseur will be instructed that no danger can come to him when dealing with the carefully trained invalid. The matter of expense to the government when there is a question of rehabilitating the tuberculous soldier and making him a breadwinner again and a useful citizen, is of course something which can only be considered as distinctly advantageous in the end.

Having had the opportunity to study massage and the Swedish movement cure in this country and abroad, I have taught these valuable therapeutic adjuvants to many of my pupils and nurses, and in cases where, for financial reasons, a professional masseur could not be employed, I have often succeeded in teaching a well member of the family how to apply the treatment to the tuberculous invalid. It was surprising to me to see how many men and women there are with a natural aptitude for this work. In some instances they developed into experts so that I could employ them in other families.

It is this experience which convinces me that many a blinded soldier might be advantageously taught the art of massage, not

only as a way of earning his livelihood, but also because he could do valuable work in our military hospitals for reconstruction and rehabilitation. Many masseurs will be needed in these hospitals and owing to the cessation of immigration from Scandinavian countries, there is already a dearth of experts. Later on, if there should be more masseurs than needed for military work, I am convinced that any well-to-do invalid in need of massage treatment would rather employ one of our blinded soldier heroes than an imported masseur.

Do I need to say that we physicians or surgeons, whether in military or civil practice, who have occasion to prescribe massage, would consider it a patriotic duty to help the blind soldier masseur to make an honest living by his newly acquired profession? He has given so much in comparison to the little we can give him in return.

Lieut.-Col. James Bordley has set forth (pages 104-110) the work which is being done under his direction in the United States Base Hospital No. 7, at Roland Park, Baltimore, Md. The institution seems to be exceptionally well placed and has already twenty inmates (soldiers and sailors) and the Colonel has given assurance that the morale of all the men is excellent, being doubtlessly greatly heightened by the generous provision of the government to have one relative of each patient live for some time on the hospital grounds to help and be present during the period of educational training. While all these blinded heroes regret that they had to leave the field of action "over there," they hope still to be of war service by aiding in the manufacture of ammunition. The plan in the hospital is to teach them to make small armatures, spark plugs and so forth, and to train them in other trades and professions in which the loss of eyesight is not a hindrance to attainment of the greatest efficiency. To my great satisfaction massage has been included among the professions to be taught to our blinded war heroes. This is but another evidence of the farsightedness of the Surgeon General and his staff and the thoroughness with which all work is done in that department.

A FEDERAL PROGRAM FOR THE VOCATIONAL REHABILITATION OF DISABLED SOLDIERS AND SAILORS

By CHARLES A. PROSSER, PH.D.,

Director, Federal Board for Vocational Education, Washington, D. C.

The following statement of the policies of the office of the Federal Board in giving vocational rehabilitation to disabled soldiers and sailors represents the best thought of the office of the Federal Board up to the present time. It has not been adopted by the Federal Board and is subject to change by that organization. In the form here presented it has been submitted to various persons for criticism. From this viewpoint it represents information on the part of the Director of the Federal Board as to what the office now thinks to be proper policies to adopt in dealing with the very difficult task of training and placing disabled men in happy and useful employment.

In dealing with the disabled man the board expects to treat him throughout as a civilian needing advice and assistance, to approve his choice of occupation, unless, after careful investigation, sound opinion shows it to be in the end not advisable, to train him to meet the needs of the occupation he has elected, to urge him to make the most of his opportunity to overcome his handicap by taking thorough-going instruction, to help him to secure desirable permanent employment, and to keep in close touch with him after he goes to work.

As soon as the army authorities have decided that any disabled man is to be discharged from the hospital and returned to civilian life, it becomes the duty of the Federal Board, through its vocational advisers in hospitals to deal with the problem of training him and of placing him in civilian employment. This task involves five possible steps:

- (a) Election by the disabled man of a course of training.
- (b) Preliminary training to fit him for a definite occupation or pursuit.

- (c) A probationary period of employment in that occupation or pursuit.
- (d) Placement in suitable employment in the occupation or pursuit.
- (e) Follow-up work to safeguard his interests.

ELECTION OF A COURSE OF TRAINING BY THE DISABLED MAN

Representatives of the Federal Board will confer with each disabled man before his discharge from the hospital. If he is able to resume his former occupation successfully, or to follow some new occupation without special training, the Federal Board will assist him, if he so desires, to secure employment therein. Should he elect, even under these circumstances, to take additional training for his occupation before he enters upon employment, the law provides that he may do so at the expense of the government under conditions determined by the Federal Board. If, however, he is unable to pursue his old occupation or to enter successfully upon a new occupation, he may be trained by the Federal Board for any vocation or pursuit that he desires to follow and in which, in the opinion of the board, he is likely to become proficient.

In advising as to future employment, representatives of the board will equip themselves with information concerning the requirements and opportunities of the various occupations. Much of this information will be furnished to the men in printed form. The representatives will also be informed concerning the kinds of occupations from which certain types of handicap are shut out.

Every effort will be made to assist the disabled man towards that occupation in which he is most interested and for which, because of his aptitude and experience on the one hand and his handicap on the other, he is best suited. In order to utilize previous knowledge and skill, the disabled man will be advised—other things being equal—to elect training, should he need it, for the industry, business or pursuit in which he was engaged before the war, or for one akin to it.

As a general policy, a handicapped man will not be directed towards an overcrowded or a waning occupation in which present or future competition might make permanent employment uncertain. In order, however, to realize fully upon the man's interest and ability, he will be given the widest possible range of choice among those desirable occupations in which, in the light of the best

medical and vocational knowledge available, with his special handicap, he can successfully engage. In this connection, the board will seek advice from those experts in the hospitals who have effected the man's physical rehabilitation.

The disabled man, with the approval of the board, may elect to be trained in agriculture, commerce, industry, transportation or the professions. The length and character of the course of instruction will depend upon the requirements of the vocation, the ability and interest of the man, and his previous training and experience.

After the vocational adviser has assisted the handicapped man to choose a suitable occupation, his case, with full information, will be referred to the office of the district wherein the man has received physical rehabilitation. Every case will there be considered individually on its merits by a local board made up of two representatives of the district office, one of whom will be a physician; and two representatives chosen from the locality, one of whom will be an employer and one a representative of labor. If necessary the man, himself, accompanied by the vocational adviser, may appear before the local board.

THE PRELIMINARY TRAINING FOR A DEFINITE OCCUPATION OR PURSUIT

After physical rehabilitation, the discharged soldier or sailor becomes a civilian to be trained for and placed in civilian employment by the Federal Board. As a learner and student it is proper that he be supported by the government; therefore, the same allotment and family allowance for his dependents will be paid as were received by them while he was in the military service. As a student, moreover, he will have the same freedom as any other civilian attending school or college. He will be "on his own," meeting such expenses as are not covered by the board from the compensation provided in the Vocational Rehabilitation Act and sent, monthly or semi-monthly, direct to him.

Through the district vocational office, where a medical officer will be stationed, the health of the disabled man will be cared for, while in training, by the board. After he secures permanent employment, he, as a beneficiary under the War Risk Insurance Act, will be cared for by the War Risk Insurance Bureau, should there be any recurrence of disabilities due to military service.

As a student supported by the government while taking instruction, the disabled man will be expected to pursue the work in a satisfactory way and to obey reasonable rules and regulations. Continued failure to do so will result in dismissal. Where it is found advisable to shift the student from one course of training or from one class or school to another, this, with his consent, will be done.

The disabled man will be given his preliminary training in a variety of ways. As far as possible, existing facilities will be utilized. While the plant, equipment and staff of existing schools and colleges will, in many instances, be used, there will have to be in many cases special arrangements to meet the needs of the disabled man. Manufacturing establishments, offices and farms will be employed to give preliminary training, especially for those occupations not yet regarded as being within the school or college field. In every case, however, the Federal Board will require the course of instruction to be adapted to the interests and needs of the disabled man, to be definitely planned for him as a learner, and to be arranged or approved, as well as to be inspected and supervised, by its agents. The length of this course of preliminary training will vary greatly according to the ability, ambition and handicaps of the man and the requirements of the work itself, or to the skill and knowledge required for present and future success.

A PROBATIONARY PERIOD OF EMPLOYMENT IN THE OCCUPATION OR PURSUIT

In assisting the disabled man to secure desirable employment, the Federal Board, as authorized and directed by the Vocational Rehabilitation Act, will utilize as far as may be practicable the facilities of the Department of Labor under some plan of cooperation to be determined. Where the man has been given preliminary training outside the plant, office or farm on which he is to be employed, this probationary period will begin when he is transferred, as a beginner, into the occupation or pursuit. Where the preliminary training has been given within the plant, office or farm, the period of probation will start at the point, in the case of each individual, where he becomes capable of entering upon the occupation or pursuit as a worker.

As a probationer he will be perfecting himself in processes, ad-

justing himself to the demands of commercial production and gradually fitting himself to become a permanent employe at the prevailing wage, either in the place where he is serving his probationary period or elsewhere. During this period the Federal Board will regard him as in training and subject to its inspection and supervision; but any wages he may receive as a probationer will be over and above the amount paid to him by the government while he is in training.

PERMANENT EMPLOYMENT IN THE OCCUPATION OR PURSUIT

This will begin at the point when, in the opinion of the board, the probationer has adjusted himself to the requirements of the occupation or pursuit as a workman. The shifting from probationary to permanent employment may be made in either the same or another establishment, and the disabled man will have the same freedom of choice and action as any other workman "on his own." Support by the government of them as a student will cease at the close of the probationary period. As a beneficiary under the War Risk Insurance Act, however, he will be entitled to the compensation allotted under that act. In most cases this will be less than the support received from the Federal Board under the provisions of the Vocational Rehabilitation Act.

The aim of the board will always be to direct the disabled man towards, and to provide him with, training for an occupation in which he can become as proficient as the normal man, yet it must not be overlooked that some of the disabled men will not become fully competent to earn the prevailing wage. Therefore, where a disabled man is unable, because of his handicap, to earn the full prevailing wage for his occupation, an adjustment in accordance with the rules and regulations of the shop is to be made. Where working agreements are in effect between employers and employes, the regulations thereof shall govern the procedure in adjusting such partial wages. Where there are no such facilities, the adjustment is to be made by conference between the man, his employer and a representative of the Federal Board. It should be fully understood that the disabled man himself, as a free contracting agent, may in every case accept or reject any terms or scale proposed.

This disabled man should, however, receive equal pay for equal work, and under no circumstances will a wage for a disabled man

be approved by the Federal Board where it appears that decreases have been made because he is receiving a compensation for his injury from the government.

As the official friend and adviser to the disabled man, the board will keep in touch with him, through its representatives, for such period after he enters employment as may be necessary to complete, in each individual case, his re-establishment as a civilian worker. The board will protect him against injustice or exploitation by the adjustment of difficulties and if need be by aiding him through further training or assistance to secure other and more desirable employment in the same or another occupation.

THE ADVANTAGES OF NATIONAL AUSPICES OF RE-EDUCATION

BY JAMES PHINNEY MUNROE,

Vice-Chairman, Federal Board for Vocational Education.

We are today in the midst of the greatest waste and the greatest saving of all history. The nations are paying daily for war purposes more than most wars have cost throughout. On the other hand, these same nations, some perforce, and some of their own volition, are saving more each day in food, fuel, clothes and even such incidentals as gasoline, than they ever proportionately saved before. The war spendings—except their legacy of debts—will cease, fortunately, within a measurable and we hope a reasonable time. The war savings will presumably go on, though in less degree, forever. Consequently, it is not extravagant to believe that the colossal outpourings of wealth which this orgy of war has forced will be redeemed, possibly in one generation, by the spirit of saving that, with many other hard and salutary lessons, war has taught.

Even though this view be too optimistic, the war, with frightful personal and national sorrow, is bringing home for all time one lesson that the United States above all other nations needed: the wickedness and the needlessness of waste. Under the brandishing of a certain Big Stick, we had begun to wake up to the evils of our material wastefulness; but when some of those predictions did not materialize,—when, for example, our hard wood forests did not disappear within ten years, when we learned of a single range of mountains in the Southwest that will yield ten million tons of coal a year for at least three thousand years, when we began to tap the atmosphere for nitrates and to double the yield of each acre of corn or cotton, we were in danger of recovering from our national fright and of believing again that Providence has supplied this favored people with substantially unlimited resources. Fortunately, however, consideration of the waste of inanimate products had turned our attention to a far more important matter: the squandering, the mistreatment, the failure to make adequate use of that greatest of natural resources, men and women.

The war has brought us face to face with the appalling fact that we are wasting, like prodigals, these precious human beings, and in three chief ways: First, by killing and maiming them in battle, cutting off at the same time what would have been the high grade progeny of thousands of selected young men; second, by complacently permitting civilian conditions which not only kill off a frightful percentage of children and youth before they can render any service to the world, but keep the adult population in a state of low efficiency; and third, by failing to bring out, through proper training and subsequent effective utilization, the latent powers of creative work existing within almost every boy and girl.

The second form of waste—that due to bad hygiene and lack of sanitation—we are overcoming by sound and widespread teaching in the field of right living. The third form of waste—that due to failure to bring out the latent powers of boys and girls, and of men and women—we are beginning to remedy by wise, purposeful and individualistic education. The first and most wanton form of waste—that due to deliberate killing and maiming in war—we can, and please God we will, put an end to by forming a League of Nations which shall root up war itself.

Meanwhile, however, we are fronted with the fact that, since 1914, the world has murdered millions of men and has caused at least equal millions to suffer physical or mental impairment through violence of war. For the dead we can do nothing; for the maimed living, we can and we ought to do everything that modern science, modern wisdom and modern appreciation of the hideous wastefulness of waste can do. The character and magnitude of the responsibility laid upon this country by this handicapping of tens and perhaps hundreds of thousands of young men, should be brought home to every citizen of the United States. The federal government is fully awake to the situation, but its servants can do little unless behind their efforts stand the force of educated public opinion and the support of enlightened public help.

So long as war lasts, this country ceases to be a huge group of individuals voluntarily associated for their common welfare. War has fused that group into an autoeratic war machine with all individual rights merged into the common necessity of overthrowing autocracy for all time. From the one hundred and ten millions of us, that war machine selects, by the process of the draft, such special

millions and as many of those special millions as may be needed for absolute, decisive victory; but, whether we are within or whether we are without that special group, every one of us is an atom in the war machine and upon each of us depends the final outcome of the war. As such units, we can function only through the war machine itself,—which, under the Constitution, is the federal government—and so far as concerns the war (and that is the only present concern of the United States), all machinery of states and cities, all civilian organizations and all individual activities and rights absolutely disappear until the one supreme end, that of winning the war, shall be attained. The facing of this inexorable logic of a state of war is one of the hardest things to induce a democracy to do; and the amazing thing in this war is not that the people of the United States were so slow in understanding it, but that they faced it so quickly, so completely and with such total self-surrender.

The social and economic groups to which we belong, the towns and states in which each of us has legal residence are, for the time being, merely the culture in which the organism of war is nourished, the reserve out of which must come the material and moral sustenance of that fighting body of one and a half millions—soon to be five millions, and perhaps eventually to be fifteen millions—which constitutes the actual fighting machine. Whatever may be our personal relationship to any unit or units in that machine, whatever we, or those social and political organizations to which we belong, may do in connection with the war, we cannot escape the higher demand of the war machine as a whole, we cannot refuse, any more than the soldier can refuse, to obey its orders without question and without, at least audible, complaint.

While every one of us is a unit in the war machine, only males between 18 and 45 can be elements in the actual fighting machine; and, as a matter of fact, those who will get to the front will be mainly within the comparatively narrow limits of 19 to 35. Moreover, while all of us must sink our private wills into the public will of the war government, only those millions between 19 and 35 who constitute the actual fighting armies are required to surrender their bodies, as well as their wills, to the absolute dominion of that military General Staff which, under its civilian Commander-in-Chief, the President, determines the fate, from day to day, of individual men.

No government, however, and especially no democratic govern-

ment, can assume such dictatorial powers without taking on, at the same time, equal responsibility. Not only is that military establishment bound, so far as the exigencies of war permit, to conserve the life of every soldier, not only is it bound to see that, while fighting, he is fed, clothed, supplied with ammunition and in a military sense, properly supported; it is bound also to look after his physical, mental and moral health, to make every provision for his rescue and rehabilitation should he be wounded or sick, and to return him, when the war is over, or when he is unfit for further military service, to at least as good a position in the economic world as that from which, by military process, it inexorably took him, because he happened, through youth, strength and comparative freedom from family responsibilities, to be fit for fighting rather than for supporting service in the all-inclusive war machine.

To argue, as some men do, that the work of getting these citizen soldiers disabled in national war back into the economic world is a task for the state from which they came, the community in which they lived, the churches which they attended, or even of such a world wide organization as the Red Cross, is not only to misinterpret the Constitution which, in war, places all power and all responsibility in the federal government, but to do violence to common sense. For the federal government to cease its responsibility for the disabled soldier or sailor at the moment he leaves the hospital, is as impossible to imagine as it would be that it should desert him at the moment of his wounding, refusing to send stretcher-bearers to bring him back or to provide hospitals and surgeons for his rehabilitation. It is no kindness to patch up a man's body, if that restored organism is to be thrown on the industrial scrap heap. To mend a man just for the sake of mending him is to do him an ill service. The physical rehabilitation, far from being an end in itself, is simply the means for making him once more a normal being ready to take his place, alongside other normal beings, in the great business of daily work and daily life.

It is absurd even to imagine any country, least of all the United States, leaving its wounded uncared for on the battlefield or untended behind the lines. But it is almost equally absurd to suppose that the federal government would abandon this task of surgery and medicine to the chance kindness of stray physicians, willing and competent though they might be. The work of functional restora-

tion, we acknowledge without need of argument, is a task requiring complete organization by that power alone, the government at Washington, which can reach every man from every state and call to its assistance, if need be, every citizen of the United States. But what we have not seen, until this present war, is that this task of physical rehabilitation has its essential complement in that of vocational rehabilitation. Moreover, for this latter task, just as truly as for the former, is needed organization complete in itself and drawing its authority from that only source, the federal government, which can reach every state, and if need be, every man and woman in each state.

So strongly did this common-sense view of the situation appeal to Congress that, after due study and deliberation, it passed, unanimously in both Houses, in June of this year (1918) the Vocational Rehabilitation Act (known also as the Smith-Sears Act), placing as definitely upon a legally constituted Federal Board the responsibility for the retraining and placement of its injured soldiers and sailors as by statute and by age-long custom, the responsibility for physical rehabilitation had been placed upon those far older federal bodies, the Office of the Surgeon General of the Army and the Bureau of Medicine and Surgery of the Navy.

Under this Vocational Rehabilitation Act, the Federal Board for Vocational Education, made up, *ex-officiis*, of the Secretaries of Agriculture, Commerce and Labor and the Commissioner of Education, and of three other members appointed by the President, is charged with responsibility for the placing back in economic life and, if need be, for the training of every soldier and sailor so far disabled in military service as to be entitled to compensation under the War Risk Insurance Law. So long as that soldier or sailor needs daily hospital care or so long as he is adjudged fit to return to full or limited military service, he is the sole ward, of course, of the medical military authorities; but from the moment that he is discharged from military service, either because his disabilities are such as to preclude further army service, or because he is relieved from such duty by the coming of peace, he becomes automatically a ward of the Federal Board for Vocational Education, and, as such ward, has established rights which he alone and by his own free choice can surrender.

The chief of these rights are two: (1) To claim the aid of the

Federal Board in getting back into his old employment, or into such new employment as his capacities and his physical handicaps may make possible; and (2) to receive, through that board, such training for employment in agriculture, industry, transportation, commerce or the professions, as his wishes, modified by the reasoned views of the board as to his capacities and the opportunities in his special field of choice, may determine. Whether the board shall help to place him, whether it shall give him training before such placement, is wholly for the discharged soldier or sailor to decide; but, having elected to receive training, the board, together with the War Risk Insurance Bureau, assumes not only his support and that of his dependents, should he have any, during the process of training, but undertakes to follow him up, after placement, and to give him reasonable opportunity for further training should the first venture prove ill-suited to his capacities.

In order, as enjoined by the Vocational Rehabilitation Law, "to effect a continuous process of vocational training," the Federal Board will coöperate to such extent as it may be invited by the Surgeon General, in those vocational activities within the hospital which are believed to have also high curative value; and as soon as it is determined that a disabled man is unfitted for further military service and is destined, when restored as far as possible, for discharge, the Federal Board, through agents stationed in the reconstruction hospitals, will advise with the patient, determine his wishes, aptitudes and best prospects for economic success, and will make plans, either for his immediate placement upon discharge, or for such a course of training, be it one of months or of years, as may seem necessary for him, under the conditions of his former lack of training and his present physical handicap, to undertake.

Should a course of training be determined upon by the disabled soldier under advisement of the board, it will be conducted, other things being equal, in or near his former home or future place of employment, and will be carried on in that school or college (public or private), in that industrial or commercial plant, on that farm or in that mine, wherein, after proper investigation by the board, it seems likely that the disabled man will get the best training for the field of work which he purposes to follow. Unless extraordinary conditions demand, the board will not establish schools of its own, believing that every consideration calls for the use of existing

agencies; but the manner of teaching and the contents of the courses will be determined by the board and, in most instances, since it is to meet the special needs of a particular man, will be quite unlike the formal training given in the conventional school, or the somewhat haphazard training common in industrial enterprises.

Wherever the training may be given, it will be paid for by the board, which is empowered also to provide, where necessary, special equipment and appliances. The time and extent of the teaching will depend upon the needs and capacities of the disabled man; but the aim will always be to make up, as far as may be, his earlier deficiencies and to fit him, if possible, for a better economic service than that performed by him before the war, or which he would have been rendering had the war not taken place.

As far as possible, the job into which the man is to go will be determined before his training is begun, both that he may have the spur of a definite goal and that his training may be focussed upon a concrete opportunity. But he will not be hurried in his training, neither will he be allowed to dawdle, for the object of this process of preliminary education is quite as much to make the man ready for efficient general service in the world as it is for effective immediate service in the line of work which he has elected to follow. It is as far from the intention of the board to produce men having exaggerated notions as to the debt owed them by society, as it is to turn out half-baked workers to be tolerated simply because they are in some degree disabled. The jobs which these men undertake will be theirs because they are fitted to take them: they will hold them because they are ready to do a man's work; and while the board will see to it that they are not exploited, it will not ask any employer to keep a disabled soldier who cannot and does not "make good."

In this task of placement the board has the specific right, under the law, to ask the coöperation of the Department of Labor, and it has the general right, under the common debt which we owe to these disabled men, to seek the coöperation of every employer in every line of activity. There will arise many perplexing problems of wages, of employers' liability, of special equipment, of unusual conditions due to the man's handicap: each must be met as it arises, and all will be successfully wrought out, if there is that same fine spirit of coöperation in solving the new problems brought forward by after-war conditions as has been shown in meeting the unpre-

cedented difficulties of the war itself. The federal government will do its part by providing the money and the administrative machinery necessary to make every disabled soldier as effective in the economic field as he was effective on the field of battle; but the government can do little unless it has the hearty and intelligent backing of every school, every industry and every citizen upon whom it may call for aid in this great, complex task of fitting back into economic life the thousands of men who, taken out by the inexorable command of war and injured in the exercise of war, have been or are to be rehabilitated by the government. That government which had the right to summon them to the abnormal service of military duty, has no less right to call them back again to normal, life-long service upon the farm, in the shop or mine or counting-house, on the railroad, or in the several professions. Before it can exercise that right, however, it must have fulfilled, as it proposes to fulfil, its sacred obligation to make those men as efficient as possible, not only physically, but also vocationally in the widest possible field of effective economic service.

THE RÔLE OF THE AMERICAN RED CROSS IN THE NATIONAL PROGRAM FOR THE REHABILITATION OF THE WOUNDED

BY CURTIS E. LAKEMAN,

Assistant to the Director General of Civilian Relief, American Red Cross.

My task is to summarize the rôle of the Red Cross in the national program for the rehabilitation of the disabled soldier or sailor. In one sense that could be done in a dozen words, by saying that here, as in all its work, the Red Cross will subordinate itself to government leadership and bend all its enthusiasm and resources to the promotion of the official plans and to the filling of such supplemental needs as may arise. While this would perhaps adequately express the spirit of Red Cross participation, a somewhat more circumstantial account of concrete activities already undertaken or contemplated on behalf of the men who have paid the price of permanent disablement will be expected.

PROGRAM OF THE FEDERAL GOVERNMENT

The wounded soldier or sailor remains under the jurisdiction of the army or navy medical authorities, and in the service, until his active treatment is ended and all possible supplemental measures of physical reconstruction have been applied. In the army, at least, the intention is to retain in the service men disabled in the line of duty, until they no longer need treatment; since April, 1918, the stated policy has therefore been to discharge no man until he is cured or as nearly cured as may be expected in view of the nature of his disability.

For those who are eventually discharged, the government, through the War Risk Insurance Law, provides not pensions based on private legislation, but just compensation to faithful workmen injured in the extra hazardous occupation of constructing a world safe for democracy. This compensation varies according to the degree of disability and the size of the dependent family. It cannot be too frequently emphasized that this compensation cannot be reduced if and because a man increases his earning power by over-

coming the handicap of a permanent injury. Accordingly, there should be no loss of incentive to seek the training which the government offers to those who cannot return to their old occupations.

Aside from this automatic government compensation, those workmen of liberty who have had sufficient native foresight, or who have been adequately persuaded, will receive for total disability the benefit of 240 monthly payments of government insurance varying in amount according to the principal they have chosen to take out. The Federal Board for Vocational Education is then authorized to offer to the free choice of any discharged soldier receiving compensation who cannot return to his old occupation, an adequate course of re-education for self-support in some other occupation suited to his condition. Similar advantages are available to those who can take up their former work, but in these cases the Vocational Board pays no family allowance during training.

When the men are trained, the same board is charged with finding them positions. In this work of placement, moreover, the board is not limited to men whom it has retrained, but has authority, under the law, to help into a new job any man who has been physically rehabilitated in the army or navy hospitals.

For those men who are entitled to compensation, and who require continued treatment after their discharge from military service, the Bureau of War Risk Insurance is authorized to provide hospital care or other necessary medical or surgical attention.

During the long period of convalescence in the hospital, the application of work is necessary for purposes of mental hygiene and functional restoration. This work should form a continuous process with the vocational training which supervenes on the man's discharge. To this end and in accordance with the Vocational Rehabilitation Law, officers of the Vocational Education Board are working in the military hospitals in coöperation with the army and navy authorities, advising the men about to be discharged and endeavoring to ensure the continuance of re-education on the voluntary civilian basis after the men leave the service.

Other federal departments stand ready to coöperate to the fullest extent of their ability. The Secretary of the Interior has an interesting plan for the assignment of reclaimable lands to returned soldiers. The Secretaries of Agriculture, Commerce, and Labor, and the Commissioner of Education are ex-officio members of the

Federal Board for Vocational Education so that thorough integration of governmental resources and effort is possible and seems assured.

THE WORK OF THE RED CROSS HOME SERVICE

Where, then, does the Red Cross fit into this comprehensive program of official activities on behalf of the disabled soldier? Obviously it will have no direct responsibility for the treatment, training, or even placement of the returned men. But the Red Cross has, according to its federal charter, assumed an obligation of auxiliary service reaching to every soldier and sailor and to his dependents whenever they indicate a need that the Red Cross can fill. This service cannot be brusquely terminated at the point of discharge, but must continue, both for the man and his family, during that indeterminate but critical interval while the man is awaiting the application of the government's plan to his individual needs and while he is getting back on his feet in civilian life. It is especially appropriate that any service rendered to the man's family should be linked up with service to the man himself when discharged. Whatever the Red Cross does in this connection naturally falls to its Department of Civilian Relief as a phase of home service work and organization.

Red Cross home service has been described as an effort to keep safe the homes and the home standards of those who fight to make the world safe for our homes. Without intrusive insistence, but with prompt and eager readiness when called upon, home service offers the channel through which patriotism and neighborliness combine to assist and protect the wives, children, mothers and other dependents of soldiers and sailors.

There is indubitable substance in Sir Baden-Powell's oft-quoted epigram that the war will be decided about 1935 in favor of the nations which retain the quality of manhood requisite to carry on the country's work after the war. Red Cross home service is inspired by an unshaken belief that every well-considered effort to prevent deterioration in the home life and home standards of America during the war is a telling blow toward this eventual victory.

Looking with shorter focus at the immediate emergency, home service charges itself with the execution of the nation's guarantee that no enlisted man's family shall lack for anything within the

power of tactful, intelligent, neighborly and community good-will to supply. The majority of soldiers' and sailors' families need no outside help in order to maintain their normal standards of health, education, industry and family solidarity. To such it would be an impertinence to offer help. But with families already nearer the danger line, the stress of war may bring definite disaster unless the inexhaustible resources of the community spirit supply the timely remedy. Red Cross home service is the community's machinery for the execution of this intention. To such families, when and only when any need is intimated, it offers information, medical or legal service, business counsel, ordinary human companionship, in fact, every possible form of practical and friendly aid.

This effort must not be narrowly conceived as one of financial relief. It is largely in order to prevent such misapprehension that the name and concept of "home service" has been utilized. The government has rightly and generously assumed the burden of money relief through allotments and allowances, and compensation and insurance payments under the War Risk Insurance Law. It remains for the Red Cross to meet temporary emergencies by grants and loans pending arrival of government checks, and to provide relief in certain definite and necessary instances where the government finds it impossible or inexpedient to act.

Last in statement, but first in importance among the objects of home service is its effect on the soldier's morale. (There is no harder-worked word in the war shop, but no adequate substitute has yet been found.) It is still difficult to realize the size and peculiarity of the psychological problem which the war imposes on the American, as doubtless also on the Canadian and Australian armies. These men fighting in France are totally removed from the possibility of those frequent visits to their homes which are so important a part of the established routine of the French and even the British soldier. Our boys must carry on without these periodic opportunities for the relief, refreshment and inspiration for renewed effort which comes from a few days with their own folks. Therefore their home atmosphere must so far as possible be transported to them. The Director General of Civilian Relief of the American Red Cross recently studied this whole problem at first hand along the American front in France, and no one has more convincingly pictured its bearings on the war and the remedies to be applied. Of the morale of our

fighting men he heard only uniform approval throughout France. They are maintaining that morale under conditions which, because of loneliness, strangeness and remoteness do not predispose to buoyance of mind.

That our men may be protected as far as possible from worry about their families, and that nothing else which will maintain morale be left undone, it is obvious that the American people must see to it that no family of a soldier lacks for anything which will enable it to write honestly cheerful letters abroad. Any condition which would disturb the man at the front and make him anxious to return and set things right with his family must be cured without delay. The Red Cross, then, undertakes to assure every soldier or sailor before he leaves for the front that whatever may befall his folks at home the local home service section may be depended upon to act promptly, sympathetically and adequately to maintain their comfort and peace of mind. A classic of the growing home service literature is a brief letter of thanks from a boy whose mother and sister had been visited and helped in some simple way. "I want to thank you all for what you have done; I can soldier better now."

Home service attacks these responsibilities through a highly developed special organization within the Red Cross. On the solid foundation of community self-expression through local committees of each Red Cross chapter, it is guided and standardized by trained executives working in these home service sections, as they are called, in fourteen division offices covering the entire country, and finally at headquarters in Washington. From the beginning there has been undeviating emphasis on the highest standards and on the need of special training for the responsible and complex duties of dealing with family relationships. The supply of trained workers was wholly unequal to the new demand, so that the Red Cross has been obliged to set up a complete educational system to meet the emergency. In twenty-five or more cities at strategic points throughout the country, home service institutes give repeated courses of six weeks duration in the principles and practice of this freshly inspired form of social work. Shorter courses are given by many chapters and additional lectures at universities, and before general audiences systematically describe the purpose and program of home service.

At present 50,000 men and women are enrolled and serving on

10,000 of these local committees. More than 300,000 families have been given some form of assistance. Even with financial relief in the background of its program, the current expenditure averages \$400,000 a month. It amounted to \$1,500,000 for the first six months of the present year and will probably exceed \$4,000,000 during the second half of 1918.

HOME SERVICE IN RELATION TO THE DISABLED MEN

Thus the Red Cross has already in operation a special piece of war service machinery, created over night, and peculiarly adapted to assist in the after-care of the disabled soldier. Congress has framed into the national law its reasoning that the task of making civilians out of soldiers is work for a civil department of the government. In this process of "demilitarization" of those who have finished their work at the front, it is surely appropriate that if the coöperation of voluntary agencies be required, a large rôle should be played by this great group of workers for the welfare of soldiers' and sailors' families. Obviously it is difficult and wasteful to separate what is done in helping a returned soldier through the critical stage of transition to civil life from what is done for his family. In theory, both functions may be effectively discharged by the same organization; in practice, the Red Cross has long been ready to meet the similar but differing requirements whenever and wherever the government, which properly takes the chief responsibility, may accept its aid.

Where, then, is such aid most likely to be asked for and how can it be given? First in continuing for the returned soldier's family, the same oversight and service which, if needed, has already been given to that family while the man was at the front. So far as medical or legal advice, information, companionship, opportunity for recreation, practical helpfulness of any kind was needed then, it will be needed now, both because the nation cannot see the family lose ground or suffer and because now more than ever, the man must know that all is well at home if his spirit is to "carry on" through these further weeks of separation during his hospital treatment and perhaps during his vocational training.

Throughout this period the influence of the family must be counted as a powerful factor in having the ex-soldier take the decisions which should lead to a safe and productive future for him-

self and, inseparably, for his family. The man must be advised against demanding premature discharge from the care of the medical officers, now so freely offered under the generous policy of the War Department. Vocational training under the law of June 27, 1918, is optional with the man. Often he must be wisely and sympathetically induced to see its advantages to himself and to his family. In bringing him to a keen realization of his own best interests in all these respects the knowledge and opinion of his family must be accounted a factor of the first importance. Those in a position to form and guide the family's opinion can render an incomparable service in thus assuring its future.

In several groups of cases, such as the blind, the tuberculous, and the mentally diseased, home service workers will often be able, on request of the proper authorities, to give confidential and timely advice, aiding the medical officers both in reaching accurate diagnoses, and in determining whether and when it is safe and wise to discharge the patient for convalescence at home.

Similar assistance can be rendered the vocational officers in studying the factors of personal, family and community background which must be taken into consideration in any sound decision as to the best occupation for a given man to undertake. Once training is commenced the support of the family must be strong and steady, and its influence must offset any temptation to take immediate work at inflated wages, to the neglect or abandonment of preparation for a safe and increasingly productive future.

But the interest and helpfulness of home service also extends directly to the man himself, though here, more than ever, the prime responsibility of the Federal Board for Vocational Education is recognized as the agency called upon to deal officially with the needs of discharged men. Already, however, the Red Cross offices have been able to furnish the Federal Board with lists of men who have been discharged and who may be eligible for training or for more productive re-employment. These men have come to the attention of local home service committees, and have been given preliminary information, relief or counsel as to their rights and duties under the War Risk Insurance Law and the Vocational Rehabilitation Law. Such informational work is the first duty of home service in its contact with the disabled man.

In the normal instance such men are presumably willing and

anxious to take advantage of the plans of the government and need, first of all, to be told of their rights and how to make application. Cases have already come to the attention of Red Cross workers, however, where men have refused to apply for compensation or any other benefits under the federal laws, being convinced that there is involved some mysterious plan on the part of the government to get the men back into the army. It goes without saying that such misapprehension could arise only among the ill-informed. It is obviously an opportunity and duty of the community Red Cross workers to take the lead in correcting any such state of misinformation and ignorance as to the beneficent purposes of the law.

So far as possible it is understood to be the plan and intention of the Vocational Board to place men for training in schools or industries near their homes. Nevertheless in some instances circumstances may call for the training of men in particular industries which offer the necessary facilities at best advantage only in a few places. This may mean that some men must continue their training for a certain number of weeks or months at a distance from their homes. In this event the Federal Board will naturally make every effort through its local agents to see that the constant friendly advisory services of an experienced older man standing either in an official or unofficial relation toward the discharged soldier shall be available for his guidance and protection. Red Cross home service sections in such cities will stand ready to render such assistance in this respect as the Vocational Board may desire. Since representative citizens, bankers, lawyers, doctors, business men and clergymen, are in practically every instance represented on home service sections, the organization is already equipped to offer intelligent service of this friendly and brotherly character.

In most instances it would probably be unfortunate if families felt obliged to migrate to any considerable distance in order to remain near the men during the relatively brief period of training in these instances where they cannot be trained near home. The home service sections have constant occasion to deal with problems of family migration and would be prepared in such instances to study each such problem on its own merits and assist in the wisest solution.

Thus again we are led back to the conclusion that no practical separation can be made between official or private efforts to assist

the man and similar efforts to aid his family. All of this points to the desirability of the closest working relations between the Vocational Board and the home service organization of the Red Cross. It is gratifying to be able to report that such relations have already been established and disabled soldiers and sailors are already being cared for under a clear understanding of the respective spheres of authority and interest of the several agencies concerned.

There is danger, in so much reference to service, of giving the impression that there is something smacking of "charity," something essentially out of accord with the American spirit of self-reliance and individual ambition in the plans which have been discussed. Nothing could be further from the truth and from the spirit of Red Cross home service. Just as the greater number of families of soldiers and sailors have needed no outside assistance, so it may be expected that among the discharged men only a minority will either themselves or because of their families require such aid as the Red Cross can offer. The experience of the past year and the records from all over the country bear witness, however, to the fact that there are a definite number of discharged men and families who have welcomed the information and assistance which the Red Cross has been in a position to give and who have accurately estimated the spirit of patriotism and homage to those who serve, with which such aid is offered. And nothing is more fundamental in the social philosophy of home service than the conviction of its duty and of its success in making those it aids self-reliant and self-sufficient in the highest possible degree.

Within the Red Cross a distinction is made for administrative purposes between the functions of the Department of Military Relief and the Department of Civilian Relief. The former controls all work done directly for the men while in service; the latter has charge of the work for families and for the men after their discharge. But it would be a mistake to imagine that such technicalities of internal organization involve any distinction in the spirit and effectiveness of Red Cross work. The functions of the two departments dovetail at many points and their respective agents work together toward the single object of serving the needs of the men.

At each military post and hospital the Red Cross Bureau of Camp Service has a field director with a staff of assistants charged with constant direct contact with the men and ready to help them in

every way. Thus provision is made for keeping families informed about the health of the men, and for establishing connection with the appropriate home service section, whenever the associate field director finds a soldier or sailor distressed because of some need in his family.

Under the Department of Military Relief has also been conducted the pioneer research and educational work of the Red Cross Institute for Crippled and Disabled Men in New York, and the more recently established Red Cross Institute for the Blind, which is intended to supplement the work of the army hospital at Baltimore, where all our blinded soldiers are receiving the most expert care and teaching. Here indeed is a final instance of the close correlation of Red Cross activities. The home service organization is assisting the military medical authorities in obtaining essential data as to the previous history of the blind men, in explaining the government's plan to the family, and in selecting the relative who will be taken to Baltimore by the Red Cross Institute and trained side by side with the blinded soldier.

A final responsibility of the Red Cross is to coöperate with every community movement to make known generally the purpose and program of the government. Home service workers are constantly explaining these matters to individuals, and must likewise lead or aid in presenting them to the public generally. When once all citizens of all ranks understand the splendidly conceived government plan, they will stand back of it in every detail and make it an assured success. Then and only then will pass away every danger of hysterical, ephemeral hero-worship which may otherwise prove a stumbling block. Then and only then will a sound and wholesome public opinion dominate and save the disabled man to a happy and productive life, in which he shall still play a glorious part in the peaceful achievements of his community, his state and his country.

VOCATIONAL WORK OF THE INVALIDED SOLDIERS' COMMISSION OF CANADA

BY T. B. KIDNER,

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with the Federal Board for Vocational Education, Rehabilitation
Division, Washington, D. C.)

In this article I shall not go very fully into particulars of the work undertaken in Canada in connection with the rehabilitation of our wounded and disabled men, except in so far as will be necessary to afford a background for a few lessons which it seems to me may be learned from Canada's experience.

We think a great deal about the war cripple, as the man who has lost an arm or a leg. Now there are reasons for our thinking this way, but I happen to have some striking figures as to the ratio of surgical to medical cases in the present war. In a report issued by the British Minister of Pensions for the week ending August 23, 1918, the latest report to be received on this side—at least it is the latest that we have in Washington—was that there were 55,869 men under treatment in the hospitals in Great Britain. Of that 55,869, 20,495 were suffering from wounds and injuries—just a trifle over 36 per cent. Nearly 2,500 were suffering from neurasthenia, paraplegia 224, epilepsy 474, and this is the appalling figure, the next one, 7,576 from tuberculosis. From other general diseases—everything under the sun, if I know anything about it from our experience in our Canadian work—other diseases 24,672. I merely mention that because the problem of the absorption of the disabled from war into industry is not wholly a problem of dealing with a man who has lost an arm, or lost a leg, or eyesight. I am thankful to say that the latter are very few in comparison. Six weeks ago we wished to have the exact figures to date, and the Canadian official figures to date of the number of men blinded in the war out of our Canadian Army of nearly half a million men were forty six. Forty-six men have lost their sight to date. That is bad enough, but I think it cannot be too often rubbed in, so to speak, that the war cripple in a great majority of cases is outwardly whole. He is not what we see in the magazines

and the moving-pictures, etc., although that is the kind of thing, of course, that the magazine illustrator wants. The very first man on this side to do any publicity work on this subject, and he has done yeoman service, sent to Canada to us for some pictures. When he was given pictures of the men attending some of our hospital schools, he sent them back and said, "That is not the kind of a picture I want. These men don't look like war cripples."

We had very little information upon which to build our policy when, about the middle of the year 1915, our disabled men began to come back to Canada. The first consideration was the provision of convalescent hospitals, for at that time hardly any men requiring active treatment were sent home. The Military Hospitals Commission (now the Invalided Soldiers' Commission) was appointed to provide convalescent hospitals, and before long a chain of these institutions was in operation from coast to coast. It soon appeared, however, that if these men were to be returned to civil life, arrangements would have to be made for their employment. Therefore, in co-operation with the several provinces, employment commissions were established in each province by the provincial government to work with the federal authorities. At the same time the matter of providing vocational re-education for those whose disabilities would prevent their return to their former occupations was also considered, and early in 1916 steps were taken to inaugurate this work. In this phase in particular, there was very little upon which to base any plans, and the first step undertaken was to make a survey of several groups of disabled men in different parts of the country. We had up to that time rather less than one thousand men on our hands returned disabled from the other side. This survey revealed several very interesting and significant facts, perhaps the most important of which was that only a comparatively small proportion of the disabled would be unable to return to their former occupations. I need not elaborate this, for it is well known and is borne out by the experience of our Allies, but roughly speaking, it appeared that of the men returned to Canada as unfit for further service, only about 10 per cent required re-education for new occupations. Of course, this is not a percentage of the total wounded, the great majority of whom are restored to further usefulness in hospitals on the other side.

Another interesting fact revealed by our first hurried survey and

borne out by our experience since, was the small proportion of men suffering from the loss of a limb. Up to the first of June last out of nearly 30,000 disabled men returned to Canada, less than 1,500 had suffered a major amputation.

Serious, then, though it is in point of complexity and difficulties, the provision of vocational re education for new occupations is not a serious one in point of the total number of men to be dealt with. At the outset, therefore, the Military Hospitals Commission felt that for the moment there was a more pressing need and that was to provide occupation, as far as medical requirements would allow, for all men undergoing convalescent treatment in the commission's hospitals. Commencing in a small way, this has grown until in or in connection with each institution where disabled men are undergoing treatment in Canada, there is provided a wide range of opportunities for occupational work during a man's hospital period. The value of this work is manifold; first, from the therapeutic standpoint, I think the commission has proved the value of occupation for mind and body of the sick man. Of course, this was not an entirely new thing, for something of the sort had been in operation for some years in connection with the treatment of mental cases in many of the more advanced institutions. I think, however, that it was the first time that the work had been undertaken on so large a scale and to embrace such a variety of occupations. The facilities included class rooms for general educational work, commercial training, workshops for arts and crafts, and a variety of mechanical and other occupations, and also outdoor work in gardening and poultry-keeping.

A second point of value was that it was disciplinary both for the disabled man himself in that it prevented that moral and social deterioration, which is always a result of a prolonged period of idleness, and was also of value in the discipline of the institution itself. There was at first a tendency to spoil our returned men by over-attention and for this it was found that active, interesting occupations formed the best antidote.

A third point which I think was proved most conclusively was that in a great many cases a man's deficiencies of education could be supplemented, or he could be given an opportunity of improving himself in some way, so that upon his return to civil life his earning capacity was increased as the result of his hospital experience. In hundreds of instances men who have passed through the hospital

schools in Canada are today holding better positions and earning more money than they were able to earn before they enlisted. I believe that the results in this respect alone have been worth the expenditure of all the time and money which this work has entailed. Later on, cases requiring active treatment were returned to Canada and for these men light ward occupations were provided, but in my opinion such work can have but little vocational value, although it may form an important therapeutic agency in the restoration of the man to health.

The commission next turned its attention to the serious task of providing vocational re-education for those who could not take up their former occupations. As a preliminary—two things seemed to be absolutely necessary. Already we were hearing from France of the reluctance of men to overcome their handicap and improve their earning capacity by means of vocational or industrial training because of the fear that it might reduce their pensions. There were indications also from Germany that the same condition of things prevailed there. Canada was at the time making new pension regulations and therefore it was arranged that a very distinct regulation on this matter should be included. Section 9 of the Pensions regulations dated June 3, 1916, reads as follows:

No deductions shall be made from the amount awarded to any pensioner owing to his having undertaken work or perfected himself in some form of industry.

That is to say, a man's pension is determined by his disability in the open labor market and not by his earning capacity, which may be tremendously improved by his vocational re-education, of course to his own benefit, but even more to the benefit of the community and the nation.

The other consideration was the question as to how a man and his dependents should be supported during his period of training, for it was obvious that a man could not be expected to undertake any course unless he could be assured of his support and of the support of those dependent upon him during the time that he is undergoing re-education. That of course brought up the much debated question as to whether a man should be retained as a soldier and receive his military pay and allowance during his period of training, or should be discharged and maintained by the government on some other basis as a civilian. I need not elaborate on that. It has been a subject of a great deal of discussion in the United States and in all

of the countries that are dealing with this problem. The Canadian authorities decided on the latter method, I am glad to say, and established a scale of pay and allowance graduated according to the number of a man's dependents, which should be payable to the man during his period of training and for one month after his course is completed. I was glad because I believe that the duty of replacing a man in civil life as a useful member of a community once more is not a military function. In point of fact, the process of rehabilitation of a disabled soldier or sailor must include his demilitarization, so to speak. It is a necessity that as a soldier or sailor he shall sink his individuality and shall in all respects live under orders in all his doings throughout his military career. It is this very fact which has made the problem of the ex-soldier always a difficult one, and in my opinion just as soon as it is decided that a man is of no further use in military service, he should be discharged to the care of some civilian authority should he need further treatment in the way of education or training to fit him for replacement in civil life.

Having settled these two points, the matter of providing courses in vocational re-education in new occupations was taken up vigorously. May I point out one thing on which there would seem to be a good deal of misapprehension? None of the warring countries has endeavored to provide re-education for new occupations for all discharged men, but only for those whose disabilities incurred on service will prevent them returning to their former occupations. The provision of a course of re-education is not the reward of valor, but a recognition of the fact that it is to the interest of the nation as well as to the individual concerned that every disabled man be restored as far as possible to the fullest usefulness.

I think, however, that the United States, by virtue of the Vocational Rehabilitation Act, passed by Congress on June 27 last, goes further than any other country, for it *does* provide that any man who is entitled to compensation as a result of his injuries may be provided, after his discharge, with a course of training at the expense of the government, even though he may be able to return to his former occupation. No provision is made, however, for his maintenance, or that of his dependents, during his training, though he will receive any compensation due him under the War Risk Insurance Act. But if his disability prevents his return to his former occupation, he will not only receive his training at the expense of the government,

but his other expenses will be met and allowances for his family will be continued, just as if he were still in military service. For this last class of men, the provisions are very similar in the United States to those in Canada.

One of the first questions usually asked by inquirers is: "For what occupations do you train the disabled men?" A line of investigation which seems to attract a great many is the attempt to discover specific occupations which will fit, or be suitable for, men suffering from specific disabilities. In my opinion, this is not possible, for there are so many factors, practically every one of which is variable, to be taken into consideration. Further, in a great many cases, the disabled man is suffering from a complication of disabilities. He may, for instance, have some disabling leg condition which would be no bar to his taking up any one of a large variety of occupations, but he may also have been gassed, or have heart trouble, which, together with his leg disability, makes it greatly more difficult to find a suitable occupation towards which he may be directed.

In our practice in Canada, from the first, we adopted the plan of considering every case individually in the light of every factor which may have a possible bearing on the case. This plan has been adopted also by the Federal Board in dealing with disabled American soldiers and sailors.

I have in my possession some survey blanks which are used by the vocational advisers of the board in dealing with disabled men who are potential cases for re-education and it may be of interest to mention, briefly, some of the items of information asked for so as to enable a man's future occupation to be considered intelligently in the light, as I have said before, of all the factors likely to bear on his case.

After the usual identification particulars common to all such forms, such items as the birthplace of the man and, if he were born abroad, the date he came to this country follow. Then comes a simple statement of his disability. One of the most important factors is the man's educational history, both the amount and kind, and this is most carefully inquired into and recorded. Of even greater importance in many cases is his industrial history, for this is often most revealing of the man's nature and characteristics, as well as of his skill or experience in the occupations.

I have just used a phrase which I should like to repeat. I spoke

of the new occupation "towards which a disabled man is to be directed." I used that phrase advisedly, for it is of great significance. The disabled man himself must have the will to succeed, the will to overcome his handicap, if his re-education and successful placement in a suitable position in some civil occupation are to be accomplished. No compulsory scheme for the re-education of our disabled is possible. In the language of the Vocational Rehabilitation Act of Congress, the man "elects" his course. It goes without saying, though, that he must be assisted in every way to elect wisely, to elect not on his whim of the moment, but in the light of all the information with which his vocational advisers can provide him.

The next question on the form is, then, an inquiry as to the man's preference (or preferences, for he is asked to make a second and a third choice) for his new occupation. Various items regarding his personal characteristics are next recorded, after which a record is made of the occupational work he has done as a part of his therapeutic treatment during his hospital period. Under the auspices of the Surgeon General of the Army, training in a variety of work is provided as a therapeutic measure in the reconstruction hospitals. The officers in charge of this work are often able to make good suggestions as to a man's future occupation in the light of their experience of him in the hospital classes. A careful medical examination is then made to discover the man's remaining abilities, and, side by side, the technical and medical experts consider the several occupations which, in the light of the numerous factors briefly indicated as appearing on the survey form, may be open to him.

Thus, and thus only, in my opinion, should the very serious duty of directing an adult towards a new occupation be undertaken. In Canada, our disabled men are being trained in about two hundred occupations and it is hoped that with the greater industrial development of the United States, an even wider range of occupations will be possible on this side of the line.

It is, of course, a cardinal principle that a man's previous education and experience should not be "scrapped," but rather should form a background or foundation for his new occupation. Hence, if at all possible, a disabled man is trained either for some new branch of his former occupation, or for some allied or related occupation.

The training is given in a variety of ways. Some few occupa-

tions can be taught in schools or other institutions, others only in the industries themselves. Others again can best be taught by a combination of these two methods. The Federal Board plans to use all three methods. The many existing institutions will be used for such occupations as can be taught in them properly. The industries of the country will be used as training places for the much larger number of occupations which cannot be taught in schools or colleges. Already the board has been assured of the hearty coöperation both of employers and representatives of labor in this work.

The wide distribution of the disabled throughout a great variety of occupations is in my opinion wise and expedient. Many troubles which would occur if a large number of disabled men were trained for a few occupations will thereby be avoided. It would be most unwise to train our disabled men for new occupations merely because it was easy to provide training in a certain few. Therefore the policy of spreading the men out is the wisest, but as I say it is hoped that here in the United States even more occupations will be found than the range of two hundred, in which we are training our disabled men in Canada.

I have rather refrained from statistics but I should like to quote briefly from the latest figures as to vocational re-education in Canada. To date 1,347 men have completed courses of re-education for new occupations and 1,868 are at present taking courses. In addition over 2,000 are taking courses during convalescence in the curative workshops and class rooms attached to the convalescent hospitals.

I think it can be fairly stated that the majority of the men who have completed their courses are today in at least as good positions as they filled before enlistment and many are actually better off. It must be remembered that they are continuing to receive their pensions, in addition, in many cases, to being able to earn the full wages paid in the industry in which they are working. That is to say, instead of leaving as an aftermath of the war a large number of men dragging out a useless existence as pensioners on the nation and on other agencies, public or private, they are self-supporting, capable members of the community, fulfilling their duties in peace as they did in war.

It seems to me that this is one of the big things we are learning from the war and already there is evidence that the lesson will be carried over into industry for the benefit of the large number of

victims of industrial accidents and disease annually resulting from modern industrial life. At this moment there is a bill before Congress, "To provide for the promotion of vocational rehabilitation of persons disabled in industry or otherwise and their return to civil employment." The bill proposes a scheme of coöperation between federal and state authorities, very much of the type already in operation under the provisions of the Smith-Hughes Act for Vocational Education. The experience gained in dealing with the disabled from war will be of great value in dealing with the victims of industry. Already many firms and corporations have discovered that something better than a gatekeeper's or a watchman's job can be found for a partially disabled skilled mechanic and that the conservation of the remaining powers of the man and the utilization of his previous experience and training are alike a duty and a sound business proposition.

For our disabled soldiers and sailors, it seems clear that it is the duty of the nation (and the nation has already recognized it) so to manage its work that the men disabled in the service of the nation by wounds or disease may come out of the disaster improved morally, socially and economically. It is a great work and worth all our efforts and will well repay them.

A CONSTRUCTIVE PROGRAM FOR THE REHABILITATION OF THE RETURNING SOLDIERS

BY FREDERIC C. HOWE,

Commissioner of Immigration at the Port of New York.

The problems of reconstruction and the redistribution of millions of men and women to immediate profitable employment on the termination of the war are as colossal a problem as the mobilization of the army. And it is so recognized in other warring countries. Great Britain has created a Ministry of Reconstruction, and a number of official investigations and reports have already been made.

Any adequate program of rehabilitation must be developed by the government. It cannot be left to chance, to chaos, to private initiative. The consequences would be too terrible. Millions of men would drift to the cities. There may be a long period of unemployment. Industries will have to re-adjust themselves to peace demands. A million and a half women have taken the places of men, while upwards of twelve million men are, directly or indirectly, engaged behind the line in the production of war products. New cities have been built. Old cities have been congested with workers. These are some of the conditions which will be violently deranged on the termination of the war. An adequate program of reconstruction and demobilization includes the following:

(a) Provision should be made for the soldier, and, in a measure, the industrial worker as well until he is needed or has been found employment. He should be given a furlough. In England unemployment insurance is being advocated to carry the soldier over this period. The United States employment service is a proper agency for carrying through the work of demobilization. It is a nationwide agency. And it can by expansion develop itself into the agency for the handling of the tremendous human problem involved in the re-location of men at their homes, at their work, and on the farm.

(b) Education should play an important rôle in reconstruction. Our colleges and secondary schools should re-take to themselves the men whose education was interrupted, and adjust their educational

equipment and curricula to the needs of the soldiers. They should be industrial, mechanical, agricultural. Examinations and degrees, and hard and fast methods should be relaxed. The aim should be to absorb into the schools as large numbers as possible, and at the same time to adjust our education facilities to the industrial and social needs of the country.

(c) The federal government should provide emergency work on a large scale. Preparations for this should be undertaken immediately. A survey should be made. Engineering plans should be prepared, and an appropriation should be secured for this purpose. A big program of internal development should be formulated looking to,

1. Afforestation.
2. Reclamation projects.
3. Reclamation of swamp and cut-over timber lands.
4. The building of roads and highways.
5. The carrying forward of building projects interrupted by the war.

These are indicative of the types of work to which great bodies of men could be immediately directed if provision were made for the same. It is in the open; it is suited to the life the men have been accustomed to; the great engines of war could be in part used for these purposes, and the industrial reconstruction work could be carried out on a semi-militaristic basis.

(d) There should be a big transportation program, and the development of a unified railway, water, and terminal system, for the purpose of making the agencies of transportation as efficient as possible. Great terminals are needed in a score of cities; our harbors and docks should be developed; thousands of miles of new railways should be built; the rivers of the country and the canals should be integrated into the rail transportation. As a result of such a program freight rates could be reduced, transportation facilities could be speeded up and the country could be organized for the handling of its domestic and foreign commerce as are the countries of Europe.

Secretary McAdoo has suggested a great hydro-electric power system, with central stations in different parts of the country. This should be identified with the railroad development projects; they should be large enough to supply cities and industries with power; there is an endless possibility in the harnessing of the white coal of

America as there was in Switzerland, and the Province of Ontario where state-owned hydro-electric projects have been carried through.

(e) All of the warring countries are emphasizing the necessity of returning the soldier to the land. And in England, Australia and Canada, a new kind of agriculture is being developed known as the farm colony. Experts have admitted that the soldier will not take up an unbroken piece of land where he is isolated from his fellows. Moreover the public domain of America is gone, and such a policy is impossible. Official commissions in England and Australia are developing plans by which the state will sell to the returning soldiers ready-made farms of from three to thirty acres, which a single man can cultivate. The farms are grouped about a village community, with educational, recreational and coöperative agencies for marketing and buying. An educational expert directs the activities of the colony. Would-be farmers are sold small farms, with a house, barn, and sufficient capital on easy terms, the state advancing nine-tenths of the capital, to be re-paid on long term installments. The experience of Australia in this field and Denmark as well, has demonstrated that men will remain on the farm under these conditions, that production is increased, and a new interest in agriculture is awakened. Such a program should be carried out in the United States. The colonies should be located as near cities and markets as possible. They should be located in New England, the Southern, Central, and Western States, and each colony should be adjusted to an especial kind of farming. Tractors and farm machinery should be owned in common as is now done in Massachusetts, New York, and Pennsylvania. In this way great economies are introduced, while the farmer through his coöperative agencies is able to protect himself from those speculative interests that have contributed largely to making agriculture unprofitable.

Such a program as this involves no permanent burden to the nation. It pays for itself. And America is in need of a big internal program in order to develop her resources and make the nation industrially efficient. A big agricultural program is demanded by the drift of population to the cities, the growth of tenancy, and the exhaustion of the soil. If such a program is not adopted, the alternative is industrial depression, the drift of large numbers of men to the cities, and widespread suffering. Only the government can take up the slack, for only the government has the resources to do so.

PLANS FOR THE EDUCATION OF DISABLED AND CON- VALESCENT OFFICERS OF BRITISH AND ALLIED FORCES

BY HENRY CHELLEW, D.Sc.,

Honorary Secretary, London School for Officers

In order that wounded officers of the English and Allied Armies may have the opportunity to receive educational or technical training during the time of their convalescence, classes for this purpose have been instituted by the Appointments Department, Ministry of Labor, London. In these classes, opportunity is afforded these officers for such educational or technical training as will fit them for munitions or other national war service so long as the medical board certifies them as unfit for general service. Further, they will be fitted for their eventual re-entry into professional, scientific or commercial occupation with new knowledge, completed training and refreshed experience.

The purposes of the officers' university and technical classes¹ are as follows:

1. The restoration of the health of wounded and debilitated officers, so that if possible they may be restored to general service fitness.

2. Alternatively the provision of technically trained officers who, after a course of instruction, remaining unfit for general service, are available for Ministry of Munitions or other national requirements.

But in addition there is the broad purpose of:

3. The building up of the scientific and technical knowledge of the nation.

4. The provision of a system by which the officer proving to be unfit may be guided toward resettlement in civil life through a process based on training.

The Department is staffed almost entirely by serving officers who are temporarily disabled. Headquarters and each district directorate is a training field in business administration. Selections

¹It should be noted that the London Officers' University and Technical Classes is in liason with the University of London and with all the colleges, institutions and polytechnics of the University, besides many institutions and private coaching firms which do not come under the jurisdiction of the University.

are made from the officers for attachment to such offices, and important emergency calls to appointments are filled from time to time direct from among the tested members of these staffs. Others are then brought forward for training.

OPPORTUNITY FOR FUTURE CAREER

Endeavour is made to place a man according to the indication which a consideration of the future career of each candidate suggests as most advisable. So it is that arrangements are being made with each University by which the time spent at the University studying one or another subject may count towards a degree, provided the officer-student after the war, or when released from the army, decides to return to the University to continue his studies and pass the necessary matriculation or other examinations if he has not already done so. The Universities are giving to each officer-student, if he leaves, a simple certificate setting forth the time which the officer has spent at the University, the subject upon which he has been engaged, and so far as possible the quality of the knowledge he has attained.

It will be seen that the scheme of the Appointments Department, under the system as carried out through the officers' classes, gives opportunity for study at the earliest possible moment to every officer so seriously damaged or debilitated as to have six months inactivity ahead of him when last Boarded. It gives the government offices and private firms the opportunity of selecting from such officers the men they require. It gives the officer a better chance of recovery to fighting fitness. It gives the too seriously damaged officer the hope of passing out to civil life without jar and with mental activities operating. Further, it gives to the officers of the Ministry of Pensions, who are working in close coöperation with the officers' classes, a review of each seriously damaged ex-officer, a review prepared not in a moment, but based on a record created by the officer himself while attached as a serving officer to an adjutant who is responsible for keeping his district director and headquarters informed as to the studies, successes and difficulties of each officer attached to him.

The serving officer seriously damaged who makes earnest effort while serving and attached to the officers' classes may expect the best possible consideration from the officers of the Ministry of Pensions when he in due course becomes an ex-officer.

COURSES OPEN TO DISCHARGED OFFICERS

With a view to assisting discharged officers to fit themselves for suitable appointments in civil life, a course on business education and administration has been arranged by the London School for Officers. The course is not of a theoretical or academic nature, but

is designed to suit, as far as possible, the special requirements of those who are likely to attend it.

Subject to such alterations as may seem desirable from time to time as the scheme develops, it is proposed that the subjects comprised in the course should be as follows:

1. *Accounting*: Giving special attention to company accounts, cost accounts, agricultural accounts, and the accounts of foreign traders.
2. *Business Organization*: Dealing with the varying forms of organization suitable to different types of businesses; the relations of business houses towards each other; the effective control of employes; the handling of work-people; and other similar subjects of especial importance at the present time.
3. *Commercial and Industrial Law*: Approached from the point of view of the business man, rather than from the point of view of the lawyer.
4. *The Elements of Commerce*: Including the organization of British and foreign trade, and the organization of markets, economic and geographical. This course will include an explanation of the resources of the various parts of the British Empire, and of the more important foreign countries.

Other business subjects will be arranged for as and when experience suggests the desirability of so doing.

The course will consist of twelve weeks' instruction, given partly by lectures, partly in classes and partly by means of seminars. The first course was started Monday, July 1, 1918, and arrangements made for subsequent courses at intervals of three months. Every effort will be made to let the men attending these classes feel that they are receiving individual attention at the hands of the lecturers who will, so far as lies in their power, assist the officers who have lost touch with business affairs to regain confidence in themselves and in their ability to follow a successful business career. It is confidently expected that a large number of business houses will gladly welcome these courses and do their best to provide suitable employment for those who have passed through them. It is proposed that the government should pay towards the cost of maintaining these courses an inclusive fee of £6.6. Od. (about \$30.00) per officer per quarter, and under present conditions the executive committee could arrange to accommodate one hundred officers simultaneously.

The following subjects are announced by the school for Courses I and II:

COURSE I

Industrial Economics and Psychology

The Science of Industry and Commerce: The Sources of Efficiency: Functional Management: The Problem of Supervision: Direction and Control: The Human Factor: Industrial Psychology: The Problem of Discipline: Time, Energy, and Money: Handling and Training the Staff: Marketing the Product: Post-War Problems in Commerce.

Business Organization and Administration

General Introduction: The Constitution of Business Houses: Partnerships: Companies: Ententes and Alliances of (a) Men (b) Masters: Business Terms and Their Meanings: Business Finance: Capital and Revenue: The Organization of Credit and Payments: Bills of Exchange: Cheques: The Stock Exchange: Secretarial Work: Meetings, Reports, Agenda, and Minutes.

Commercial Law

Sale of Goods: Nature of Business Contracts: Who May Contract: What Constitutes Offer and Acceptance: Void and Voidable Contracts: Bankruptcy and Bills of Sale: Master and Servant: Bailment: Carriers.

Accounting and Business Methods

The Aims of Accounting: The Meaning of an Account: Debit and Credit: The Theory of Double Entry: The Trial Balance: "First Entry" Records: Capital and Revenue: Balance Sheets and Profit and Loss Accounts: The "Double Account" System: Depreciation: Trading Accounts: Stock Accounts: Modern Methods of Accounting without Books: Sectional Balancing.

Commerce and Commercial Geography

The Exchange of Goods: Markets: Speculation: Prices: Costs of Transport and Marketing: Freight Rates: Prices and Values: Payment for Goods: International Indebtedness.

The geographical distribution and supply within the British Empire of some of the more important food-stuffs and raw materials of Industry, with special reference to the position and needs of the United Kingdom.

COURSE II

Industrial Economics and Psychology

The Science of Organization: The Scientific Method Applied to Industry: Internal Organization: The General Manager and His Functions: The Human Factor in Management: Staff Training: Psychology as Applied to Industry: Methods of Increasing Efficiency: Men, Money and Machinery: Vocational Adaptation: The Nature of Industrial Regimentation: Scientific Distribution.

Business Organization

The Remuneration of Employees: Credit Records and the Handling of Bad

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Debts: Selling: Advertising: Buying: Cycles of Trade: Speculation in Relation to Business: Hedging: Insurance: The General Organization of Expanding, Contracting, and Temporary Businesses Compared: State Regulation of Trade and Industry.

Banking, Currency and Exchange (6 Lectures)

The Functions of Money and Types of Money: The Functions of the Banker: Banking Business as Revealed by the Analysis of Banking Balance Sheets: The Bank of England: The Bank Rate: Foreign Exchanges.

General Elementary Methods of Statistics (6 Lectures)

The Collection of Data: Definition of Units: Classification and Tabulation: Percentages: Averages: Graphic Methods.

Commercial Law

Principal and Agent: Executorships and Trusts: Bills of Exchange, Bills of Lading, and other negotiable instruments: Persons under Disability: Partnerships: Insurance: Limitations of Actions: Remedies.

Accounting and Business Methods

Methods of Balancing: Branch Accounts: Foreign Currencies in Accounts: Foreign Branches: Systems of Internal and External Check: Precautions against Fraud: Tabular Bookkeeping: Periodical Returns: Reserves and Reserve Funds: Goodwill: Profits: Partnership Accounts: Capital Reorganizations: Cost Accounts: Criticism of Accounts.

Public Administration

The Structure, Finance, and Functions of Local Government Bodies in England.

The Commercial Relations of the Chief European Countries before the War

The Geographical Basis of the Internal Trade of Europe: Deficits of Continental Europe Supplied from the Outside World: The Work of British Shipping: Europe as a Market for the United Kingdom: The Coal Trade and Its Importance: The Demand for Manufactures: Competition: Transport and Tariffs: Financing of Industries and Trade: Peaceful Penetration: The Relations of Central Powers with Neighbouring Areas.

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